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November 13, 1998

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US Fish & Wildlife Service<sup>1</sup>  
COWO, Arcata, CA

Bruce Halstead  
US Fish & Wildlife Service  
1125 - 16th Street, #209  
Arcata, CA 95521-5582



**American Lands  
ALLIANCE**

RE: ISSUANCE OF PROPOSED INCIDENTAL TAKE PERMIT, HCP,  
IMPLEMENTATION AGREEMENT, AND EIS FOR THE PACIFIC  
LUMBER COMPANY (PERMITS PRT-828950 AND 1157)

Jim Jontz,  
Executive Director

Dear Mr. Halstead:

Daniel Hall,  
Director, Forest  
Biodiversity Program

Enclosed, please find our comments on the draft Habitat Conservation Plan (HCP), Implementation Agreement (IA) and Environmental Impact Statement (EIS) prepared as part of the Pacific Lumber Company's request for an Incidental Take Permit (ITP) to harm or otherwise "take" threatened and endangered species that would normally be protected by the federal Endangered Species Act (ESA). We appreciate the opportunity to provide feedback on these draft documents and Pacific Lumber's request.

Phone: 503-978-0511  
5825 N. Greeley  
Portland, OR 97217  
Fax: 503-978-1757  
wafcfbp@teleport.com

American Lands is governed by and represents citizens from across the United States who seek to protect and restore our forests, watersheds, and biotic resources for the benefit of future generations. American Lands' Forest Biodiversity Program is dedicated to promoting improved biodiversity conservation and resource management on non-federal forestlands in the west, including through incentives and more effective policy implementation. Program staff have been assessing forest ITPs and their mitigation plans (i.e. HCPs) for a number of years. We have published several reports examining problems with forest HCPs and policy changes needed to ensure that HCPs begin contributing positively to imperiled species' recovery.

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We believe the Pacific Lumber Company (PalCo) and its subsidiaries are, first and foremost, ineligible for an ITP under the US Fish & Wildlife Service and National Marine Fisheries Service (collectively the Services) administrative rules for ESA permits.<sup>1</sup> The company has repeatedly violated the California Forest Practice Act (FPA) and its Rules, the

<sup>1</sup> See 50 CFR 13.21(b) and 50 CFR 220.21(b). Under 50 CFR 13.21(b), for example, the USFWS may not issue ESA permits if the applicant has been assessed a civil penalty or convicted of any criminal provision of any statute or regulation relating to the activity for which the permit application is filed, if this penalty or conviction evidences a "lack of responsibility," or if the applicant has failed to demonstrate a valid justification

federal ESA, water quality rules, and other relevant policies, and cannot be expected to behave responsibly. According to some reports, PalCo has violated the FPA roughly 300 times since 1995, with at least 12 violations involving criminal charges. 40 violations have reportedly been found this year alone, including operations that clearcut stream buffers and ran trucks directly through fish-bearing streams. Earlier, in 1992, PalCo logged part of the owl creek old growth grove without receiving a timber harvest permit (THP). Federal courts have also found that PalCo intentionally falsified marbled murrelet survey data and violated basic ESA-based murrelet protections twice when logging the owl creek grove in 1992.

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This pattern of abuse has continued while PalCo has been developing its proposed HCP, and the company cannot reasonably be expected to change its behavior. Even the California Department of Forestry & Fire Protection (CDF) has recognized this problem. Most recently, in a November 9, 1998, letter, CDF rescinded PalCo's operating permit, citing two recent FPA violations involving "gross negligence and willful disregard for the Forest Practices Act and Rules." These are the same rules that, according to the draft HCP, will be used to protect a number of species "covered" by the plan.

PalCo's draft HCP and IA also fail to meet many fundamental scientific and policy standards and should therefore also be rejected on their merits. These standards are discussed in our detailed comments, and are based on a number of independent scientific studies, as well as basic statutory and administrative policies for ITPs, HCPs, and IAs. In short, PalCo's draft HCP and IA fail to protect threatened and endangered species, as well as unlisted species for which PalCo expects to receive "no surprises" prelisting agreements. PalCo's proposed management will result in substantial net losses of habitat for most, if not all, of the "covered" threatened, endangered, and unlisted species, even under the HCP's own terms. A careful reading of the plan, the IA, and the various exemptions they provide from the HCP's core protection measures suggests that even higher losses are likely.

Granting PalCo the proposed ITP would therefore undermine most of the "covered" species' chances of survival and would certainly set in motion land management practices which fall far short of those needed for species' recovery. Giving "no surprises" guarantees to PalCo would add insult to injury by absolving PalCo from making meaningful improvements to the HCP and its mitigation measures for 50 years.

We appreciate the considerable effort that has gone into securing public acquisition and protection of the Headwaters Grove, and trust that the Grove's protection will move forward independently of the ITP and HCP. Please note that we are concerned that the specific terms of this deal may be wasting precious public land acquisition dollars by paying above-market prices for the grove. We are also quite concerned that the deal may erroneously suggest to

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for the permit and a "showing of responsibility." Laws relevant to forest and biodiversity management on private and state lands include, but are not limited to federal and state endangered species acts, state fish and game codes, state forest practices rules, and federal and state water quality rules.

some parties that major corporate landowners are not responsible for providing basic protections for threatened and endangered species.

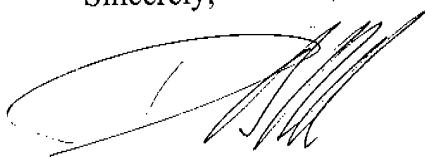
Given this substantial public subsidy for protection of Headwaters, one would think that it would be even more practicable for PalCo to provide adequate species protection and mitigation measures across the remainder of the plan area. However, PalCo has not only failed to provide adequate protections for fish-bearing and intermittent streams, but has also failed to protect other sensitive sites. The company also proposes to clearcut most of the forest area on short rotations instead of adopting longer rotations, selective logging regimes, and other alternative forestry approaches that would be far less harmful to fish, wildlife, and plant communities, and which could produce significantly greater amounts of high quality timber and revenue from timber and non-timber forest products across the plan's 50 year timeframe. In other words, PalCo has utterly failed to minimize and mitigate their impacts on imperiled species to the "maximum extent practicable," as required by the ESA's HCP standards.

Finally, it should be noted that the National Marine Fisheries Service (NMFS) may not have the authority to grant PalCo an ITP for threatened anadromous fish species. If this indeed the case, then NMFS should also not be giving PalCo "no surprises" pre-listing guarantees for salmonids likely to become listed as threatened.<sup>2</sup>

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Thank you for giving our concerns your attention and for working to protect and restore our region's biodiversity and forest productivity. If I can clarify any of our concerns or assist in developing alternatives to issuing PalCo an ITP, please feel free to call or write.

Sincerely,



Daniel A. Hall  
Director, Forest Biodiversity Program  
American Lands Alliance

enc. Detailed comments on the PalCo ITP, HCP, IA, and EIS.

American Lands (1998). Examples of Fish and Wildlife Conservation Needs on Non-Federal Forests and Species Harmed by "Habitat Conservation Plans."

American Lands (1998b). Inventory of Pending and Approved Forest HCPs.

Hall (1998). Economic and Silvicultural Practicability of Alternative Forest Management.

<sup>2</sup> The notice for NMFS' HCP regulations stated that "...making these regulations apply to all threatened marine species is not appropriate...." (55 Fed Reg 97, May 18, 1990)

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**Detailed Comments on the Pacific Lumber Company's Proposed Incidental Take Permit, Habitat Conservation Plan, Implementation Agreement, and Environmental Impact Statement (Permits PRT-828950 and 1157)**

November 13, 1998

Prepared by Daniel Hall, Director, Forest Biodiversity Program,  
with contributions by Jennifer Randle, MS

**American Lands Alliance**  
5825 N. Greeley, Portland, OR 97217

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**Introduction:**

The following comments are organized around a number of goals and standards that should be met by Habitat Conservation Plans (HCPs) intended to mitigate habitat destruction and "take" of threatened and endangered species under Incidental Take Permits (ITPs) issued as exemptions from the Endangered Species Act's normal protection measures. These goals and standards also address the Implementation Agreements (IAs) and National Environmental Policy Act (NEPA) assessments (in this case an Environmental Impact Statement (EIS)) required for HCPs and ITPs.

These goals and standards are common sense approaches needed to meet the requirements of the Endangered Species Act (ESA), including the requirements to use the best available science, avoid significant impacts to species' chances of survival and recovery, and minimize and mitigate impacts to the maximum extent practicable. The goals and standards are also based on the recommendations of a number of independent conservation biologists, scientific assessments of HCPs, and other independent sources, including Aengst *et al* (1998), Benda *et al* (1998), Hood *et al* (1998), Murphy *et al* (1996), NCEAS (1998), and Noss *et al* (1997). Likewise, many of these criteria are also explicitly required by existing policies, including those listed in Section N below.

**A. Scope and Applicability of the HCP:**

1. ITPs and HCPs should only be used in limited circumstances. The ITP and HCP should not be used to eliminate or degrade habitats across significant portions of landscapes, ecosystems, or species' remaining ranges. Likewise, ITPs and HCPs should

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not be used where more effective alternatives exist. Particularly with larger HCPs, "take" should be limited to fraction of the given species' habitat on the property.

***Additional Comments:***

The HCP and ITP contradict these criteria. Habitats and species will be "taken" across the majority of this 219,000 acre forest unit. As discussed below, PalCo has failed to utilize a variety of alternate silvicultural and forest management practices in the managed portions of the plan area that would significantly lessen habitat impacts while also providing potentially greater timber yields and revenues. Moreover, as discussed below, some of the core mitigation measures which *are* provided by the HCP are subject to substantial exemptions and may not be maintained for the plan's duration.

The HCP, ITP, and the land management practices they permit are likely to significantly impact the species ostensibly "covered" by the plan, as well as other species which rely heavily on non-federal lands for their survival and recovery. Examples of these species are listed in American Lands (1998).

Given the substantial infusion of public dollars to subsidize habitat protection on the property, alternative approaches which would reduce the loss of habitat should be quite feasible.

**2. The HCP and ITP should not allow "take" of species and habitats which can not be fully mitigated, including in relation to the goal of promoting species recovery above and beyond credible baseline conditions and trends.**

***Additional Comments:***

As discussed below under item B-3, the HCP fails to mitigate substantial levels of "take."

**3. The size and duration of the HCP and ITP should be limited as necessary to allow for complete and thorough assessment of baseline conditions and species' recovery needs, development of effective mitigation measures, and satisfaction of other objectives.**

***Additional Comments:***

While size may not have been a factor, the HCP fails to satisfactorily assess baseline conditions, provide for species recovery, and mitigate habitat losses.

**4. If there is not sufficient information to determine how some listed and/or unlisted species will be affected, or to design viable mitigation strategies for those species, then they should not be included in the ITP and any regulatory assurances. Such species may**

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be discussed in the HCP, but "take" should not be permitted until adequate information, mitigation measures, and scientific and public review are in place.

*Additional Comments:*

As discussed below under C-3 and Section F, the HCP fails to adequately assess the needs of, and mitigate impacts to, a host of fish, wildlife, and plant species. Based on the information and mitigation measures provided in the HCP, a "take" permit (i.e., an ITP) should not be issued for most of the "List A" or "List B" species. Mitigation measures for marbled murrelet, northern spotted owl, and salmonids are also often highly inadequate, though this is not necessarily due to a lack of information on the species' needs.

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**5. The number and scale of ITPs and HCPs being developed and approved by the USFWS and NMFS should not exceed the agencies' capacity to effectively and consistently evaluate, negotiate, monitor, evaluate, revise, and enforce the plans over time.**

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*Additional Comments:*

The decision to issue PalCo an ITP should be evaluated in this light.

**B. Relationship to Other ESA Policies and Programs:**

**1. "Safe Harbors" type agreements should not be given to landowners who have significantly reduced their baseline habitat conditions below natural levels, or who will be degrading habitats under ITPs and HCPs. "Safe Harbors" agreements tell landowners that they will be allowed to "take" new habitat produced in the future, provided they maintain habitats at current baseline levels. As such, they may be appropriate for small forestland owners who are stewarding their land for relatively intact habitat conditions, and who seek an "insurance policy" that allows continued management should additional endangered species colonize the property. Other standards and conditions for "Safe Harbors" agreements are discussed in Noss *et al* (1997) and materials from American Lands.**

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*Additional Comments:*

The HCP and IA do not appear to include "safe harbors" type agreements. The final documents should also be evaluated with this in mind.

**2. HCPs should not be used as substitutes for recovery plans and should not be counted as contributing towards recovery goals unless they fully mitigate the impacts of "take," significantly restore habitat areas which are already degraded, and are**

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otherwise fully consistent with species' recovery. Consistency with recovery plans may not be sufficient, as many existing recovery plans are heavily compromised. Ideally, recovery plans would be in place prior to development of HCPs, to provide a proper planning context.

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*Additional Comments:*

PalCo's HCP largely fails to fully mitigate "take" for most, if not all, of the covered species and should be discounted, at the very least, when looking at the relationship between the HCP and recovery objectives.

**3. HCPs should not be used as substitutes for listings or critical habitat designation.**

*Additional Comments:*

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PalCo's HCP is no exception.

**C. Conservation, Recovery, and Mitigation Standards:**

**1. The HCP should utilize alternate land management and development practices and opportunities which provide the landowner with reasonable economic returns but have fewer impacts to imperiled and sensitive fish, wildlife, plants, and ecosystems.** Examples include longer timber rotations, harvest of mushrooms and other nontimber forest products, fee-based recreation, and provision of ecosystem services such as delivery of clean water, adequate summer flows of water, and the sequestration and storage of atmospheric carbon dioxide, all of which are more associated with older, more diverse forests subject to fewer disturbances.

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*Additional Comments:*

The HCP's discussion of alternatives is focused primarily on alternative marbled murrelet conservation zones, and does not address alternate land management strategies on portions of the landscape outside of these zones. (IV-B-13) As discussed under C-5 below, alternative forest management regimes involving longer rotations, selection forestry, high levels of retention, production of non-timber forest products, and other approaches are both silviculturally and economically practicable in the north coast California region. (See Hall (1998)) The HCP fails to utilize these alternative practices.

**2. The HCP and/or EA/EIS must document the comparative economic costs and benefits of the landowner's chosen alternative and other, more biologically-effective alternatives, if the landowner fails to use those more effective alternatives.**

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***Additional Comments:***

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The HCP completely fails to meet this criteria.

**3. The plan must *fully minimize and mitigate* all direct and indirect habitat impacts and habitat losses for listed and unlisted species covered by the ITP or regulatory assurances such as "No Surprises," to avoid producing a net loss of the quality or quantity of habitat during any planning period.** As a first preference, impacts and "take" should be avoided (i.e., minimized). Then, all remaining "take" and impacts must be fully offset (i.e., mitigated) by providing replacement habitat. If habitat will be "taken" on one portion of the property, then replacement habitat of equal quality should be provided elsewhere. As discussed in USDA FS *et al* (1993), Benda *et al* (1998), and WAFC (1997b), habitat protection, late successional reserves, and other forms of impact minimization must be used for species like marbled murrelet and rare lichens which are not likely to relocate to new sites, or which are highly sensitive to disturbances. Protected areas should include the best available habitat.

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***Additional Comments Regarding Old Growth Habitats and Species:***

The plan falsely claims that over 15,000 acres of old growth forest will be protected. (See IV-B-1-31, for example.) A more accurate figure is 4,357 acres, given that protections in the Marbled Murrelet Conservation Areas (MMCAs), public lands buffers, and around murrelet nest sites outside the Headwaters Grove and MMCAs are either temporary or are subject to substantial exemptions and vague requirements.<sup>1</sup> This amounts to only 17% of the existing 25,164 acres of old growth in the plan area, for a net loss of 20,807 acres of old growth habitat. Even if the MMCAs are protected throughout the HCP's lifespan, the HCP will still only protect 8,038 acres of old growth, i.e., 32% of existing old growth, for a net loss of 17,126 acres. Figures 3.9-1 and -2 of the EIS also show that substantial amounts of intact and residual old growth stands are located outside the Headwaters Grove, MMCAs, and narrow no-harvest buffers on Class I and II streams.

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While the vegetative buffers provided adjacent to public lands are valuable, they will be logged through "selection" forestry methods that are more accurately described as "highgrading," for they will simply remove the larger trees and will not necessarily provide ecologically viable old growth habitats *per se*. Likewise, while some additional old growth may be protected within the plan's riparian buffers, the no-harvest buffer zones are extremely narrow and will not necessarily provide viable interior forest habitat, which is crucial to many old growth dependent species.

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Protections for old growth in the MMCAs have also been grossly overstated in the HCP. The wording of the HCP is such that protection (or "retention") of old growth within the MMCAs

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<sup>1</sup> This figure includes old growth in the Headwaters and Owl Creek Groves.



is *not* mandatory. In the HCP's discussion of MMCA silvicultural practices, the HCP states that PalCo "shall not be required" to undertake the subsequently listed practices, which include retention of old growth stand components. (IV-B-1-33) Protection of old growth within the MMCAs is not explicitly required elsewhere in the HCP.

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Equally important, "retention" of old growth stand components does not necessarily translate into full protection of old growth stands. Under the HCP's terms, substantial portions of a stand could be removed through loosely-defined thinning operations or regeneration operations while still retaining some portions of the stand associated with old growth. The result would not necessarily be an ecologically viable old growth stand, even if it met simplified old growth stand definitions. (Benda *et al.* (1998)) While the HCP states that green tree or salvage logging for the purposes of road maintenance, fuels reduction, or other purposes shall be "kept to a minimum" in the MMCAs, no quantitative limits are provided. (IV-B-1-34) It is not uncommon for landowners to remove "hazard" trees from as far away as several hundred feet from a road. PalCo may also open up new rock pits covering up to 4 acres per MMCA without consulting with the Services, provided that no trees over 12" dbh are removed. (IV-B-1-34)

The IA also includes a rather open-ended provision allowing various types of logging operations in the MMCAs, including *but not limited to* commercial thinning. (VI-D-17) No limitations on the scope or intensity of logging are provided here. An additional provision in the IA would also allow PalCo to amend the HCP to allow wholesale logging of the MMCAs if the delisting criteria in the marbled murrelet recovery plan have been met. (VI-D-48)

The HCP also fails to provide any meaningful mitigation for clearcutting and other industrial timber operations across the unprotected, managed areas covered by the HCP, i.e., 200,730 acres out of the total plan area of 219,298 acres.<sup>2</sup> According to figures from PalCo's SYP document, PalCo expects to eliminate 39,834 acres of late successional and old growth forest in the plan's early decades. Included here are substantial amounts of old growth Douglas fir stands, a habitat type that is particularly rare in north coastal California.

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This amounts to a loss of 67% of the late successional and old growth forest present at the plan's outset, according to PalCo's model, and presumably represents virtually all of the late successional and old growth stands and trees remaining outside of the narrow no-harvest riparian buffers and old growth groves purchased and protected by the state and federal government.<sup>3</sup> (These figures do not include additional old growth that might be logged out of the MMCAs over time.) Not surprisingly, PalCo also expects to increase

<sup>2</sup> This figure assumes protection of no-harvest portions of riparian buffers on Class I and II streams, the Headwaters Grove, MMCAs, and owl creek grove.

<sup>3</sup> The table from which this data is drawn includes data for the entire 211,706 acre PalCo property.

open areas and young forests by 61,500 acres in the plan's early decades, an increase of 120%. (III-C-Projected Forest Seral Types)

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While PalCo's model projects some partial returns of older forest stands in the plan's last few decades, these replacement stands will be provided long after old growth dependent species have been impacted by the loss of habitat. The importance of providing replacement habitat significantly *prior* to removal of existing habitat is discussed further under C-13 and in Benda *et al* (1998). Equally important, heavily managed stands which meet minimal stand criteria for late successional and old growth forest will not necessarily provide viable late successional and old growth forest habitat. (See Benda *et al*. (1998), for example)

***Additional Comments Regarding Marbled Murrelet:***

The marbled murrelet's chances of survival and recovery will be significantly harmed by the loss of old growth habitats discussed above. Most of the uncut and some of the residual old growth across the property is occupied or potential murrelet habitat. (IV-B-1-2) 17% to 23% of occupied marbled murrelet habitat in the southern Humboldt region will be lost under the plan. (IV-B-1-3) The losses will be even greater if the MMCAs are logged under the exemptions discussed above.

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Out of the 219,298 acres covered by the HCP, only 8% (i.e. 18,568 acres, much of which is not old growth *per se*) will be conserved for marbled murrelets under the plan's basic measures. Thus, at most, only 50% of the 36,973 acres of designated critical habitat for marbled murrelets in the plan area will be protected. The HCP indicates that replacement habitat on federal lands across the murrelet's range is not expected to develop until 2045. (IV-B-1-15) This is well after the impacts of "taking" murrelet habitat on non-federal lands will have been felt. These figures also fail to account for provisions in the HCP and IA that would allow the MMCAs to be logged over time.

The IA's provisions allowing logging of the MMCAs are also based on several flawed assumptions. As noted above, the IA allows the MMCAs to be logged if the delisting criteria in the murrelet recovery plan have been met, regardless of whether the murrelet is doing well across its range and has been officially delisted. This provision also assumes that murrelets will no longer need the habitat within the MMCAs if murrelets in the plan area reach delisting levels. However, if murrelet populations in the plan area reach delisting levels, it will be due largely to protection of the MMCAs, and destroying this habitat will likely reduce murrelet levels back below delisting levels. According to the HCP, the marbled murrelet recovery plan also stated that murrelet habitat in the area is "...critical to the three state marble murrelet population recovery over the next 100 years" and that the "...amount of suitable habitat protected in public parks is probably not sufficient..." (IV-B-1-20)

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Logging the MMCAs would mean that, at most, only 12,038 acres, or 33% of the murrelet's designated critical habitat in the plan area would be protected. It should also be noted that much of this protected area is not old growth *per se*, and thus provides lower quality habitat for the murrelet.<sup>4</sup> Without the MMCAs, only 4,357 acres of old growth would be protected, i.e., 12% of the critical habitat area.

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Even if the MMCAs are not heavily logged under the IA's delisting exemption, it is unclear whether management of the MMCAs will adequately protect murrelets. Many activities, such as thinning, use of roads and rock quarries, hunting, fuel removal, and possibly (if permitted) harvesting of some residual and second growth trees will still be allowed in the MMCAs. (IV-33, -35).

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Over the course of the HCP, all murrelet habitat outside the protected old growth sites and the MMCAs will be lost. While the HCP promises some nest site protections across the plan area, these protections cease once the nestling fledges or the nest is determined to be abandoned. (IV-32). Nest abandonment is likely, given allowable levels of disturbance and logging near the stand, particularly, during the non-nesting/breeding season. PalCo's recent management history also suggests that the Company will not make a good faith effort based on sound scientific protocol to locate and protect nesting sites.

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In terms of population figures, the HCP fails to provide any mitigation for killing or harming at least 251 to 340 marbled murrelets and for destroying or degrading around 37% of occupied murrelet habitat in the HCP area, as well as other suitable habitat. (IV-B-14-Tables 5G & 5H) 109 of these were occupied sites, the others were times when a bird was detected but no sign of "occupied behavior" was shown (IV-fig 6). These figures do not include additional "take" that would be authorized under the various MMCA protection exemptions.

#### *Additional Comments Regarding Northern Spotted Owl:*

PalCo's habitat projections for northern spotted owl indicate that, under the plan, 36,829 acres (or 46%) of high quality nesting habitat will be lost by the plan's second decade, and that losses will again reach 19,348 acres (or 24%) by the plan's eleventh decade. Full return of baseline levels are not expected until the plan's ninth and twelfth decades, and may never occur if the plan is not fully implemented. An additional 9,910 acres (or 94%) of medium quality nesting habitat will be lost by the third decade, and will be partially replaced and then lost again during the plan's last few decades, provided that the HCP continues to be implemented.

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Likewise, non-habitat, will *increase* by 28,693 acres (or 132%) by year 35, though it may decrease some in later years, depending on plan implementation. Roosting habitat will be

<sup>4</sup> The murrelet's habitat needs are discussed in some detail in Mueller et al (1996).

highly unstable, jumping from an initial increase during the first plan period to a net loss of 8,102 acres (or 75%) during later periods. The lowest quality nesting habitat will also increase over baseline levels during some planning periods. (IV-C-12 and Maps 15, 28, 29, and 30)

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These figures for expected loss of spotted owls and owl habitat are probably underestimated, even without accounting for the lack of firm protection for the MMCAs and other key areas, as relatively little of the high quality nesting habitat for northern spotted owl is protected in the Headwaters Grove purchase area or the MMCAs. (Maps 1 and 15) The Headwaters Grove, for example, only includes 3,000 acres of high quality nesting habitat. (IV-C-10) Likewise, only about 37 (or 24%) of roughly 152 mapped owl nesting sites on the property are encompassed by the purchase area or the MMCAs. (Maps 1 and 27) Many, if not most, of these sites are scheduled to be logged during the plan's first decade. (Maps 20 and 27)

Moreover, while the HCP implies that "take" of northern spotted owls will be limited to 33% of the plan area's baseline owl population, actual "take" levels will likely be considerably higher. (IV-C-21). The HCP does include a useful provision: a floor on allowable "take" that is intended to maintain 100 owl pairs, including (presumably) pairs within the Headwaters Grove and MMCAs. (IV-C-11) However, owl levels may fall below this floor to unspecified and substantial levels for any number of years, provided that they do not fall below 100 pairs for 3 *consecutive* years. (IV-C-11) Since PalCo anticipates logging most of the spotted owl sites located outside of the Headwaters Grove, MMCAs, and narrow no-harvest riparian buffers during the plan's initial few years, this floor will be far less meaningful than might be initially assumed.

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Technically, the plan limits "take" during the first 5 years to 16 sites which are presumed "inactive," and to other owl habitat not adjacent to active owl nest sites, no such restriction exists during the remainder of the HCP's lifespan, during which all owl sites and habitat outside of the protected reserves and narrow no-harvest riparian buffers can be expected to be heavily logged. (IV-C-6) While the plan ostensibly protects active nest sites in managed areas with 1,000 ft. buffers during breeding season, only a 500 ft. (18 acre) area must be maintained at other times. (IV-20). This 18 acre area is probably insufficient to maintain the nest site's long term viability, meaning the site can be logged as soon as it is abandoned. It is also unclear whether these (inadequate) protections will remain in place beyond the plan's first 5 years. Given the statements made earlier in the HCP, it should be presumed these sites will be logged after 5 years. (see IV-C-6)

Consequently, the HCP may permit logging operations which will, in effect, lower owl populations well below "floor" levels, given that it may take some time for the impacts to be felt and for the HCP's "floor" policy to be triggered. PalCo's proposed monitoring plan for northern spotted owl will also render this "take" floor less meaningful, as noted under G-3.

The amount of primary owl habitat provided by the plan's narrow riparian buffer strips may also be overstated. While the HCP claims that 27,951 acres of nesting habitat will be provided in riparian buffers, only 2,143 acres appear to be encompassed in the plan's no-harvest zones along Class I and II streams. It is not clear that post-logging retention levels in outer buffer areas will be sufficient to provide viable owl habitat, or that the owls will actually use these areas given the level of disturbance and the lack of interior forest habitat. Older trees and snags that develop in the buffers' managed stands may lack the defects and other structural characteristics found in naturally developed old growth stands normally utilized by the owl. (Benda *et al* (1998)) Moreover, owl habitat in the buffer zones will often not develop until many years after owl habitat has been removed across most of the plan area, leaving the owls stranded in the interim.

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The loss of habitat and spotted owl populations documented here will also be seriously underestimated if PalCo takes advantage of the various exceptions for the MMCAs' protection measures. These added losses would include at least 16 documented spotted owl nest sites currently in the MMCAs. (IV-C-10) The additional old growth logging which would be permitted under these exceptions are discussed in more detail above.

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As with other species, protecting and recovering northern spotted owl requires not only that adequate amounts of habitat be provided on the property, but also that these habitats be configured over both time and space to provide viable, functional habitat, and that ecosystem processes and other factors be addressed. However, the HCP clearly indicates that high quality nesting habitat for the owl will become much more fragmented over the course of the plan. (Maps 15, 28, 29, and 30)

The HCP cites various spotted owl population studies which indicate that owl populations in the northcoast region are stable, at best, and are likely declining somewhat. (IV-C-3 et seq) Approval of the HCP and subsequent "take" of spotted owls on PalCo's land will simply exacerbate this decline. Given that other "take" permits and HCPs are in development across most of the industrial timberlands in the north coast region, and that the wet winter weather conditions found to hinder owl reproductive success are likely to continue, PalCo's "take" permit will probably exacerbate a much more significant decline in owl populations than has currently been documented. (IV-C-3; American Lands (1998b))

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#### ***Additional Comments Regarding Aquatic and Riparian Habitats and Species:***

Steelhead, coho, chinook, and cutthroat are among the fish known to utilize streams in the plan area. Along with other salmonids, resident fish, and other aquatic and riparian species, these salmonids need viable habitats in the plan area for their survival and recovery. According to information provided in the EIS, full mitigation of "take" of salmonids would require no-harvest stream buffers of 340 ft. on each side of Class I (i.e., perennial, fish-bearing) streams, 170 ft. on Class II (perennial, non-fish-bearing) streams, and 100 ft. on Class III (intermittent) streams. (2-23)

Given that the HCP purports to address the conservation and recovery needs of a variety of aquatic and riparian species associated with old growth and late successional forests, the plan should utilize the stream and riparian area protection measures identified in USDA FS *et al* (1993) and USDA FS *et al* (1994). These documents and standards represent the best available science in this area. In summary, these documents recommend no-harvest buffers of 2 site potential trees (i.e., roughly 340 ft.) along each side of Class I streams, and no-harvest buffers of 1 site potential tree (i.e., roughly 170 ft.) on each side of Class II and Class III streams.<sup>5</sup>

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USDA FS *et al* (1993), Huntington (1998), and the EIS (3.7-33) all indicate that buffer widths approaching two site potential trees are necessary to *begin* providing microclimate effects and habitat for riparian species. Amphibians and reptiles comprise a large portion of the ecosystem in all water systems and are an integral part of the food web. Adverse effects to amphibian and reptilian populations can lead to adverse impacts on aquatic species such as salmon and trout. Changes in microclimate conditions can alter the ecosystem of the riparian environment for amphibians, reptiles, and other plant and animal species. Buffer widths that allow increased direct and indirect solar radiation into the riparian zone will increase air temperature and decrease relative humidity in that area. If these measurements move beyond the tolerance levels of terrestrial riparian flora and fauna, these species may perish or be forced to find other suitable habitat to complete their life cycle.<sup>6</sup>

However, both the HCP's interim and default (i.e., bottom line) stream buffers fall far short of the buffer standards discussed above, reducing salmonids and other aquatic and riparian species' chances of survival and recovery. On Class I streams, the default no-harvest buffers would only be 30 ft. In the area between 30 and 100 ft. from the stream channel, significant though limited amounts of logging would be permitted. Between 100 and 170 ft., substantial amounts of logging would be permitted. On Class II streams, the default no-harvest buffers would range from 0 to 30 ft., while logging would only be limited somewhat in an additional buffer ranging from 0 to 130 ft. wide. Moreover, Class

<sup>5</sup> These figure may be conservative, as they are based on site potential Douglas fir heights. Site potential redwood trees will be significantly higher. Moreover, site potential tree heights are usually based on 100 year old trees. True site potential trees would be significantly older and, presumably, higher. Other studies have found that comparable buffer widths are needed. Much of the data on buffer strips indicates that a minimum buffer width of 30 meters (~100 feet) is necessary to avoid significantly impacting riparian environments (Erman *et al.* (1977); Steinblums (1977); Rudolph & Dickson (1990); Chen (1991); Spackman & Hughes (1994)) For many processes such as sediment flow and delivery of large woody debris, this minimum width may be increased to 60 to 80 meters or one site potential tree (Broderson (1973); Beschta *et al.* (1993); Thomas *et al.* (1993))

<sup>6</sup> Rudolph & Dickson (1990), for example, reported amphibian and reptile populations were significantly lower in aquatic habitats with narrow buffer widths (<30 meters) than those with wider buffer strips due to greater shading (i.e., less solar radiation and lower air temperatures) and open understory vegetation.

III streams would receive no buffers whatsoever, save some limitations on the operation of heavy equipment near the stream channel. (Summarized from EIS, 2-30, -31, -32)

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The HCP's extremely narrow -- and, in the case of Class III streams, nonexistent -- no-harvest zones will also lead to adverse impacts on the amphibian populations that are crucial to this habitat. The HCP's unclear standards for Class II streams and failure to require *any* meaningful vegetative retention along Class III streams is particularly egregious. The resulting lack of forest cover means that evapotranspiration rates are likely to increase with increasing air temperature and may contribute to a lowering of the groundwater table and soil moisture content. This may prematurely dry up intermittent (i.e., Class III) streams, depriving flora and fauna of an important water source during the dry season. Class III streams also provide important primary habitat for a number of amphibians and other species, including species that do not tend to utilize larger Class I and II streams as frequently. (American Lands (1998); Benda *et al* (1998)) Equally important, roading, logging, and other operations within and adjacent to Class III streams is likely to lead to significant amounts of erosion and sediment loading in downstream channels, including areas needed for salmon spawning and other functions.

The HCP also fails to address the question of whether streams which once provided habitat for salmonids and other fish have become non-fish-bearing due to historical and current roading, logging, and other land use practices. Recovering salmonids will often require restoration of these potential fish-bearing streams. If the HCP's stream classification and mitigation system simply treats all non-fish-bearing streams as Class II or Class III streams, regardless of whether they used to be Class I streams, then the plan will fail to adequately support salmon recovery.

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Moreover, the HCP fails to provide clear protective buffers around seeps, springs, and other important riparian areas, beyond the minimal protections that might be required under the FPA rules at any given time. These rules are commonly recognized as providing inadequate protection for a variety of riparian plant and animal species. While USDA FS *et al* (1993) and USDA FS *et al* (1994) recommend no-harvest buffers of 1 to 2 site potential trees (i.e., roughly 170 ft. to 340 ft.) around different types of non-stream riparian areas, the HCP fails to even discuss these areas, much less provide specific, enforceable protection measures.

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The HCP also fails to provide adequate mitigation measures for livestock impacts, recreation activities, and other permitted activities in and along streams, seeps, springs, and other riparian areas. Livestock grazing and activities in riparian zones can seriously degrade water quality and fish and wildlife habitat. Cattle, if left to their own devices, prefer the cooler, more lush environments alongside rivers and streams. Unless fenced out, cattle are likely to trample banks and increase sedimentation, remove vegetation which stabilizes soil, filters sediment and debris, and provides cooling through shade, and

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deposit their wastes in water bodies. Increased water temperatures and degraded water quality resulting from the removal of overhanging vegetation by cattle adversely affect numerous fish species, especially during breeding and spawning periods, when cool, shaded water is ideal. Rare riparian plants are also likely to be damaged or eliminated.

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The HCP fails to determine whether existing livestock operation in the plan area are impacting water quality, fish and wildlife habitats, rare plants, and other values. No mitigation measures are proposed beyond whatever fencing may have already been constructed, and beyond limiting grazing to 1,000 head of cattle. 1,000 head represents an intensive level of livestock use, given that grazing will not be distributed across the entire plan area. No limitations or mitigation measures have been provided for grazing by other types of livestock. Additional problems with the plan's approach to grazing are discussed at C-4.

The HCP also fails to provide mitigation measures for impacts resulting from hatchery programs authorized by the ITP. Artificial propagation can substantially affect the genetic integrity of natural salmon populations in several ways. First, stock transfers that result in interbreeding of hatchery and natural fish can lead to loss of fitness in local populations and loss of diversity among populations. The latter is important to maintaining long-term viability of an Evolutionary Significance Unit (ESU) because genetic diversity among salmon populations helps to buffer overall productivity against periodic or unpredictable changes in the environment. (Fagen & Smoker (1989); Riggs (1990)). Ricker (1972) and Taylor (1991) summarized some of the evidence for local adaptations in Pacific salmon that may be at risk from stock transfers.

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Second, because a successful salmon hatchery dramatically changes the mortality profile of a population, some level of genetic change relative to the wild population is inevitable, even in hatcheries that use local broodstock. (Waples (1991b)). These changes are unlikely to be beneficial to naturally reproducing fish.

Third, even if naturally spawning hatchery fish leave few or no surviving offspring, they still can have ecological and indirect genetic effects on natural populations. On the spawning grounds, hatchery fish may interfere with natural production by competing with natural fish for territory or mates. If they successfully spawn with natural fish, they may divert production from more productive natural-by-natural crosses. The presence of large numbers of hatchery juveniles or adults may also alter the selective regime faced by natural fish.

For smaller stocks (either natural or hatchery), small-population effects (inbreeding, genetic drift) can also be important concerns for genetic integrity. Inbreeding and genetic drift are well understood at the theoretical level, and researchers have found inbreeding depression in various fish species. (Reviewed by Gall (1987) and Allendorf & Ryman



(1987)) Other studies have shown that hatchery practices commonly used with anadromous Pacific salmonids have the potential to affect genetic integrity. (Simon *et al.* (1986); Withler (1988); Waples & Teel (1990); Campton (1995))

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These documented adverse affects have not been addressed by the HCP. PalCo has two facilities which may have a potential impact on the genetic structure of wild salmon populations that should be addressed by the HCP. Studies should be conducted to determine the genetic integrity of the wild salmon populations in this area in order to establish baseline conditions. A plan should then be implemented to take into account any affects on these wild populations.

*Additional Comments Regarding "List A" and "List B" Species:*

Many of the other fish, wildlife, and plant species ostensibly "covered" by the HCP and ITP (i.e., "List A" and "List B" species) also depend on or are closely associated with old growth and late successional forests. Consequently, these species will be harmed by the net loss of old growth forest documented above and by the intensive clearcutting and other operations permitted by the ITP across most of the plan area.

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While the HCP claims to provide some late successional forest over time in the plan's managed areas through various "selection" forestry regimes, it should be noted that type of selection proposed in the HCP is actually highgrading. Highgrading removes the best trees from a site, leaving behind the less productive and genetically poorer trees. Such practices will most likely remove the older and larger trees from various sites, eliminating the very components which contribute to late successional forest character. These problems will be compounded by the frequency of logging (or "rotations"); PalCo will be removing the trees which contribute to late successional characteristics not long after those characteristics are beginning to become established, meaning that functional late successional forest stands will not be found across the landscape.

As noted above, the IA would also allow PalCo to amend the HCP to allow wholesale logging of the MMCAs if the delisting criteria in the marbled murrelet recovery plan have been met. (VI-D-48) This would drastically reduce and even eliminate the MMCAs' conservation value for other covered species, including species' whose mitigation measures in the HCP hinge upon protection of intact and undisturbed old growth forest stands and ecosystems within the MMCAs. Even the more limited logging otherwise allowed in the MMCAs may be detrimental for various "List A" and "List B" species which are even more sensitive to habitat alteration and disturbance than murrelets.

The plan also generally fails to provide mitigation for habitat losses to be suffered by species that rely on well-developed second growth forests, hardwood forests, or which are highly sensitive to logging and other disturbances. A significant amount of hardwood forest stands, for example, will be converted to conifer stands under the ITP and HCP. (III-C-Projected

Forest Seral Types) While this might be appropriate to the extent that early successional hardwood stands are over represented in the plan area due to past logging, it is not clear that such stands are overrepresented. Some hardwood species such as tanoak are also a natural and important understory component in conifer dominated forest types. Moreover, as noted in the HCP, hardwood stands represent the natural dominant forest type in some areas and should not be converted. Hardwoods provide important sources of mast and other food for various wildlife species, contribute to soil productivity, and provide important forest structure. The HCP fails to make these important distinctions and outline clear protections for natural hardwood stands and for proper amounts of hardwoods components across the landscape.

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The plan's treatment of unlisted "List A" species is extremely cursory and fails to address those species as if they were listed. Some species are "addressed" in a page or less.

The HCP relies on inadequate sources in claiming that existing California Forest Practices Act (FPA) Rules adequately protect the southern torrent salamander, for example. Similarly, the HCP claims that its riparian conservation strategies are adequate for the salamander, but fails to examine whether disturbance levels and logging permitted in the Class II stream buffers are compatible with salamander survival and recovery, and whether the buffers are located in all areas needed, including intermittent streams, seeps, springs, etc. Moreover, the plan fails to account for how roading, logging, and other operations in and around intermittent streams and upslope areas will affect habitat in other areas of concern, such as Class II streams, including through siltation, changes in water temperature, changes in nutrient loading and timing, changes in water delivery during winter storms and dry summer months, etc. (IV-E-3) Virtually no mitigation is provided for these upslope impacts.

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The plan's discussion and mitigation measures for tailed frog, red legged frog, and foothill yellow legged frog, are similarly flawed.

Likewise, no mitigation is provided for grazing impacts, which are noted as being detrimental for northwestern pond turtle, and presumably are harmful to other riparian and aquatic species, as well as some terrestrial species. (IV-E-8) Specific problems with grazing are discussed above and under C-4. No consideration is given to the turtle's needs outside of narrow riparian buffer areas for reproduction or other functions, nor is the role of unprotected seeps, springs, ponds, and other areas in the turtle's survival and recovery discussed. The plan's discussion and mitigation measures for other aquatic and riparian species is similarly flawed.

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The plan's assessment of impacts for many unlisted species relies significantly on the statement that the plan area comprises a relatively small portion of the species' ranges. This statement ignores whether the species are well distributed within their ranges, how their populations are faring, and how the species will be impacted by other "take" permits and other activities across their ranges. The assessment for red legged frog, for example, simply asserts that the HCP's riparian and road management measures will be adequate, without any

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examination whatsoever of the impacts which are, or are not, mitigated through those measures, and how those impacts will affect the red legged frog and its survival and recovery. (IV-E-6) The assessment for sharp shinned hawk simply states that impacts will be minimal, even though both clearcutting and thinning operations are believed to degrade the hawk's habitat, on the basis that the hawk is not frequently found on the property. However, the HCP also indicates that hawk populations in the plan area have largely gone unstudied. (IV-E-20) No mitigation measures whatsoever are proposed for ferruginous hawk, on the basis that the hawk does not nest on the property, even though there is no evidence that surveys have been conducted. (IV-E-25)

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While the plan states that minimal nest site protections will be provided for great blue heron, great egret, snowy egret, black crowned night heron, burrowing owl, and other species, no surveys have been conducted to identify nest sites, and the nest site protections are seasonal only, meaning that most of the nest site except for the actual nest tree and screening trees will be logged over time, potentially rendering the site unusable. (IV-E-11) Similar problems exists with the mitigation measures for osprey, sharp shinned hawk, Cooper's hawk, northern goshawk, western snowy plover, burrowing owl, bank swallow, which fail to protect nest or burrow sites outside of the nesting season, except in some cases for the nest tree itself. Contrary to the concept of conserving ecosystems rather than adopting species by species approaches, the HCP also proposes to replace nest trees with artificial nesting structures.

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No mitigation is provided across most of the HCP area for loss of habitat for Vaux's swift, pileated woodpecker, and purple martin, which utilize larger snags. (IV-E-31) Under the HCP, PalCo will be logging and removing current and future suitable habitat for the birds across most of the plan area. The HCP simply claims that the Headwaters Grove, MMCAs, and the riparian and conservation strategies' minimal protection measures will be sufficient for the swift, and martin, without examining whether these generalized protection measures will meet each bird's specific needs. (IV-E-32, -34) Likewise, the plan simply claims that the snag retention standards will be sufficient for pileated woodpecker without examining whether those standards retain and create snags of sufficient size, distribution, configuration, and location for the woodpecker, and whether the snags will exist within a forest landscape that is conducive to the woodpecker. (IV-E-33) Equally important, the HCP fails to even define these snag retention standards for managed areas, meaning that other statements in the HCP suggesting that snags will be concentrated in riparian buffers and other areas will probably hold sway.

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Likewise, no mitigation has been provided across most of the HCP area for the loss of habitat for red tree vole, which is usually associated with old growth stands and structures, and perhaps more developed second growth, according to the HCP. (IV-E-38) The HCP explicitly fails to provide species specific mitigation measures, and simply claims without examination that the Headwaters Grove, MMCAs, and riparian protections will be sufficient. (IV-E-38) No discussion is provided of how the species' specific needs relate to the specific conditions that will result under the HCP.

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Similarly, no specific mitigation measures are provided for Humboldt marten. Moreover, the HCP fails to even identify the specific habitat needs of this extremely rare mammal. The plan simply asserts that the Headwaters Grove, MMCAs, and minimal snag retention standards in managed areas will be sufficient for the marten. (IV-E-40) However, the HCP not only fails to identify and require implementation of specific snag retention measures in the managed areas, but (as discussed below) actually suggests that snag retention will be concentrated in the riparian buffer zones, MMCAs, and other areas, *not* across the managed landscape. Nor does the HCP examine whether mere snag retention will be sufficient for the marten within the heavily logged landscapes that will comprise most of the HCP area, assuming that snags are actually retained in these areas.

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Pacific fisher suffers a similar fate. While the HCP indicates that the fisher requires dense mature forests, the plan then claims that the MMCAs (which are to be thinned under the HCP) and the managed areas will provide suitable habitat for the fisher. And once more the HCP claims that this species will benefit from the plan's snag and wildlife tree retention requirements, while failing to ever define those requirements or to actually require snag retention in managed areas. (IV-E-41) Given the intense level of logging expected across the majority of the HCP, these statements appear patently false.

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While the plan summary claims that the HCP will provide for the retention of snags and, to the extent they currently exist across the landscape, down logs, the HCP itself *does not* appear to include retention measures. Even the plan summary indicates that these snags and down logs will generally *not* be provided across managed areas and the majority of the forest landscape, as implied later in the HCP, but rather will only be provided in the riparian buffer zones. The summary also indicates that down logs will only be provided where they already exist, including in riparian buffers. Given the slow decay rates of larger redwood logs and the common recent practice in the north coast amongst industrial wood products companies of removing old down logs for chips, lumber, or other uses, existing levels of large and medium size logs are probably highly inadequate. Equally important, the minimal retention levels cited in the plan summary would probably not be sufficient mitigation for many species, even if they were provided in managed areas, as discussed in Franklin *et al* (1997).

The HCP also fails to provide other mitigation measures identified in Benda *et al* (1998) as necessary for a variety of sensitive species, including species dependent on late successional forest habitats, intact riparian habitats on intermittent streams, and other special habitat areas. The reviewers in Benda *et al* (1998) found for the most part that the mitigation measures provided by the draft Western Oregon State Forests (WOST) HCP were inadequate for various species. The mitigation measures provided in PalCo's plan for habitat losses and other impacts in the managed areas often fall far short of the measures provided by the WOST HCP, indicating that PalCo's HCP is particularly inadequate.

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McComb *et al* (1993) and a number of other sources listed below in Section M below provide further information on species which depend on old growth Douglas fir forests and other key habitat types being eliminated pursuant to the ITP and HCP.

Similar problems can be found with the various "List B" species ostensibly addressed by the HCP. A host of other sensitive and special status species identified in HCP as being located on the property or likely to require viable habitats in the area receive no attention whatsoever. (See HCP volume II)

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**4. If the ITP and HCP allow residential development or other land uses beyond roading, logging, and other forestry operations, then the HCP must provide mitigation measures that are specifically tailored to offset "take" and other impacts from these land uses.**

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*Additional Comments:*

While the HCP and IA clearly envision that "take" associated with grazing, recreation, and other non-forestry land uses will occur, the HCP does not seriously assess the resulting impacts and utterly fails to provide any meaningful mitigation measures for these land uses. In the case of grazing, the HCP simply assumes that ranchers will "encourage" cattle to stay out of streams, seeps, and other sensitive areas. However, significant impacts to streams, riparian areas, soils, understory vegetation, tree regeneration, and other habitat components and factors can be expected with livestock grazing. The assumption that ranchers will be able to constantly monitor the movements of their stock and devote precious time to keeping cattle out of streams, seeps, riparian areas, etc., is wholly unrealistic. Placing salt licks away from these areas will also not prevent livestock from entering the areas during various times. Recreational activities, particularly motorized activities, camping, and other activities, can also be expected to have substantial impacts.

**5. The Endangered Species Act (ESA) states that the impacts of "take" must be minimized and mitigated to the "maximum extent practicable." "Practicable" should be understood as simply referring to cases where a lack of available technology renders a mitigation measure impossible for all practical purposes. This approach is commonly used in other environmental policy arenas. It is also required by the NMFS regulations for permits.**

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*Additional Comments:*

While PalCo's HCP frequently fails to fully mitigate impacts to various "covered" species and their habitats, providing full mitigation is neither impractical nor unheard of. Several existing forest HCPs provide full mitigation for key species, and even require this mitigation to be in place before "take" can occur.<sup>7</sup> At least one study from the region has also found

<sup>7</sup> The Ribar Timberlands HCP is a "no net loss" HCP. The HCP permits the landowners to log their spotted owl nest site, but only after a viable replacement site has been provided. The International Paper HCP for red cockaded woodpecker in the southeast is also a "no net loss" HCP, in terms of the numbers of woodpeckers to be protected at all times.

that providing more meaningful no-harvest buffers along Class I, II, and III streams would have only a minor impact on the net present worth of industrial timberlands. Schillinger *et al* (1998) found that placing no-harvest buffers of 50 meters (i.e., roughly 165 ft) on fish-bearing streams and 20 meters (roughly 66 ft.) on other streams would reduce the net present value of industrial timberlands in western Washington by only 19%, far less than suggested by some sources. The losses identified in Schillinger *et al* could also be offset significantly by the economic *benefits* that can accrue to landowners and others from maintaining intact forests, including through production of non-timber forest products and markets for forest ecosystem services. (See Hall (1998))

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PalCo's HCP also fails to adopt reasonable and practicable alternative forest management practices in the HCP's managed areas -- practices that would be far less harmful to fish, wildlife, and plant communities, and which would likely produce significantly greater amounts of high quality timber and revenue from timber and non-timber forest products. (See Hall (1998) for a discussion of the silvicultural and economic practicability of alternate forestry regimes.)

Moreover, PalCo has been heavily subsidized through public payments to provide reserve areas despite the fact that other landowners in the region have found it "practicable" to provide reserves without such subsidies.<sup>8</sup> These subsidies should make it even more practicable for PalCo to adopt exemplary practices across the remainder of the plan area, including but not limited to more effective riparian buffers, protections for unstable slopes, and use of longer rotations and selective forestry practices.

Rather than managing for high value, high volume older forest stands, PalCo plans to liquidate its older forest inventories across most of the plan area. The plan will fail to maximize overall timber production and revenues from the managed areas by logging timber stands well before they reach their cumulative mean annual increment (CMAI), much less their full growth potential.<sup>9</sup>

The Sustained Yield Plan document, for example, indicates that PalCo will log 28% (54,382 acres) of the property during the plan's first 10 years, mostly through clearcutting and other even-aged practices.<sup>10</sup> This amounts to clearcutting on a cycle (or "rotation") of roughly every 40 years. While PalCo suggests longer rotations will be used in some stands, they will generally be instituted *after* the forest is logged on a short-rotation schedule. Because the provisions regarding longer rotations are in PalCo's SYP document

<sup>8</sup> The Simpson, Ribar Timberlands, Elliott State Forest, and Washington DNR HCPs maintain reserve areas for northern spotted owl.

<sup>9</sup> See Hall (1998) for an explanation of CMAI and its significance as an indicator of timber and revenue productivity. PalCo's SYP document corroborates the substantial price premium for older, larger-diameter trees. (III-B-36 et seq.) The document also indicates that selection forestry is considerably cheaper, on a per acre basis, than clearcutting. (III-B-39)

<sup>10</sup> Based on a total managed area of 193,139 acres. (III-C-Acres Managed in First Decade by Stand Type)

and are not in the HCP *per se*, it is also unclear whether these provisions can be enforced over time. Given PalCo's track record of compliance with the FPA, ESA, and other policies, the prospects are not encouraging. Regardless, if the goal is to establish more economically and ecologically productive and sustainable forestry practices, then one should maintain and enhance the productivity of existing stands, rather than liquidate them, which simply delays and expands the task of inventory restoration. (Hall (1998))

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The same trend is evident in the long-term harvest schedule presented in the company's SYP document. PalCo plans to log 841,395,000 board feet (bf) of old growth redwood and Douglas fir in the plan's first 2 decades, compared with figures ranging from 54,153,000 bf to 44,582,000 bf in each subsequent 2 decade period. This represents a 94% to 95% decline in production of old growth timber and its associated higher economic returns, *in each and every subsequent 2 decade period*, based on this data alone. (III-C-Harvested Volume by Log Type) While managing for increased production and harvest of older timber over time might require initial decreases in old growth harvests, this alternative strategy should increase total harvest and revenues from larger older trees over most of the planning period. (Hall (1998))

Ironically, PalCo used far less intensive logging practices prior to acquisition by MAXXAM, proving that alternative forest management regimes are practicable across the forest's managed areas. Reportedly, PalCo limited logging to selection harvests and did not log above CMAI prior to the MAXXAM takeover. (See Robinson (1988) as cited in Hall (1998))

**6. The HCP must avoid, minimize, and mitigate impacts to *all* species listed as threatened or endangered, all candidate species, and all other sensitive and at-risk species which will be impacted by the landowner's proposed forest management activities. On the ground surveys will be needed to determine which species are present.** Because landowners and the Services are not generally surveying for species prior to or during the development of forest HCPs, "take" of other listed and non-listed species which depend on old growth, late successional forest stands, and other older and more complex forest stands may be occurring under HCPs that only explicitly address a few well-known species, like northern spotted owl. Soils, potential natural vegetation, climate zones, and other factors can also be used to help determine which species would exist on the site under natural conditions, and are thus likely to need viable habitats on the property as a contribution to their recovery. Indirect impacts may include the establishment of invasive alien plants, pests, and pathogens facilitated by poor forest management, by road-building, and by other operations.

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#### *Additional Comments:*

The HCP and its mitigation measures appear to have been designed principally around marbled murrelets, with some additional partial protection for salmonids. Species-specific protections for other species are minimal and haphazard at best. As discussed above under

B-3, the MMCAs, while probably of significant benefit to northern spotted owl, do not encompass much of the highest quality owl nesting habitat or even most of the existing owl nesting sites.

Likewise, the HCP's discussion of alternatives is focused solely on alternative marbled murrelet conservation zones, and does not address alternate land management strategies on portions of the landscape outside of these zones. (IV-B-13) No alternatives appear to have been considered for northern spotted owl or other species. As noted above under C-1 and C-5, alternative forest management practices could be utilized across managed areas to provide substantially improved protection and habitat conditions for a variety of species, including, to some extent, other species officially addressed by the HCP.

**7. As envisioned by Congress, the HCP must actively benefit each species above and beyond accurate baseline conditions and trends. These benefits must be in terms of species-specific, measurable increases in habitat quantity and quality, and in species' populations.**

*Additional Comments:*

This is difficult to evaluate, as accurate baselines have not been established for most species. However, as discussed above under C-3, it is clear that most species will suffer a net *loss* of habitat under this HCP.

**8. The HCP must actively and measurably promote the recovery of each species, above and beyond accurate baseline conditions and trends, including in terms of habitat quantity and quality and species' populations.** This will be particularly important with species which depend more heavily on non-Federal lands, and where the landowners' past management has eliminated or heavily degraded large amounts of habitat. Recovery is, after all, the overarching goal of the ESA. Recovery should be understood as the point where populations, habitats, and ecosystem functions are viable over the long-term (i.e., several hundred years) in the face of fires, climate changes, fishing and hunting, and other significant disturbances, impacts, and uses. There should be a high (i.e., 95%) probability of being consistent with recovery when all risk factors to the species are considered.

*Additional Comments:*

PalCo's assumption that the company need only assist in the recovery of "covered" species until federal lands can support increased populations shows PalCo's lack of concern for species recovery. (IV-23). This approach also erroneously assumes that improved management of federal lands will be sufficient for various species' recovery. In fact, many species in the region rely heavily on non-federal lands for their survival and recovery, given their unique habitat requirements, the location of federal lands, and other factors. (See American Lands (1998))

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The bottom line is that PalCo's ITP and HCP will fail to maintain -- much less support and contribute towards -- the recovery chances of most of the plan's "covered" species, contrary to the ESA's basic goals and standards, including the standards for HCPs. As discussed under item C-3 above, most "covered" species will suffer a net *loss* of habitat under the HCP, when many species will need habitat restoration for their recovery. It is not impracticable for landowners to contribute more actively towards species' recovery, as discussed above under item C-5 and as indicated by at least one existing forest HCP in the region.<sup>11</sup>

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According to PalCo's HCP, the marbled murrelet recovery plan's goals include stabilizing and increasing population sizes, protecting the continued existence of viable populations. Goals specific to the recovery area encompassing the HCP include: preventing the loss of occupied habitat, minimizing the loss of suitable habitat, and decreasing the time for development of new suitable habitat. (IV-B-1-19 & 20) However, as discussed above C-3 and C-5, the HCP generally moves the murrelet in the opposite direction, including by allowing PalCo to eliminate substantial amounts of murrelet habitat and population levels. It is unclear that the MMCAs and Headwaters Reserve will be enough land to help stabilize and increase the population. Moreover, as noted above under C-3, protection levels in the MMCAs are uncertain at best.

Similarly, the ITP and HCP will allow PalCo to eliminate substantial amounts of habitat and populations of northern spotted owl. While the HCP suggests that the plan will conserve more owls than recommended by the draft spotted owl recovery plan, the HCP fails to discuss whether the draft recovery plan is still adequate in light of recent developments, including continued declines in owl populations, poor implementation of the Northwest Forest Plan for Federal lands, more recent and accurate analyses of the conservation contribution needed from non-federal lands, current and expected levels of "take" allowed across the region through other "take" permits, and other factors. (IV-C-21) (See item F-I below.) PalCo's assertions also fail to consider that "take" of owls and owl habitat will probably *exceed* levels projected in the HCP, given the variety of exceptions and loopholes in the HCP's owl conservation strategy. (See item C-3 above)

**9. In return for the regulatory flexibility provided by ITPs, and in recognition of how industry landowners' past practices have contributed significantly towards species' endangerment, larger HCPs in particular should contribute towards the restoration of habitat for species which have been extirpated from the plan area by past habitat destruction, but which will depend upon the plan area for their recovery.**

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<sup>11</sup> Port Blakely agreed to survey for and protect all northern spotted owl nest sites over time, including any new sites which become established. Likewise, Port Blakely agreed to provide habitat for three breeding pairs of northern goshawk, even though only one active nest site existed when the HCP was initiated.

*Additional Comments:*

The HCP fails to fully mitigate impacts to covered species, much less restore habitats above baseline levels. Most "covered" species will suffer a net loss of habitat as discussed under C-3 above. Likewise, the plan does not appear to help restore extirpated species.

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**10. Mitigation measures must be logical, credible, and likely to be implemented. Habitat areas sold at full market value to the public should not be counted as mitigation, nor should management changes on Federal lands or other areas which are already protected.**

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*Additional Comments:*

The HCP and IA frequently fail to meet these criteria. It is questionable whether PalCo should be given "credit" for protection of the Headwaters Grove, for example, since it is being purchased by the public, and most likely at or above fair market value, given the fact that PalCo would not be able to log the site without an ITP.<sup>12</sup> Certainly protection of the Headwaters Grove should not be counted as mitigation for habitat losses and "take" that will occur elsewhere in the plan area under the ITP and HCP. Protection of the Headwaters Grove is a form of impact minimization and mitigation for potential harm to the Grove. Claiming that this protection offsets logging in other areas is biologically inaccurate and "double counts" the mitigation provided by protection of the Grove.

The likelihood of the plan's various mitigation measures being implemented over time is also uncertain. While the IA does include some useful provisions requiring implementation throughout the plan's duration, the HCP and IA also include major exceptions and loopholes which will allow PalCo to log the MMCAs, which are ostensibly protected to benefit a wide range of old growth species, and to avoid implementing other basic provisions. The IA also lacks sufficient compliance incentives. (See items C-3, H-7, I-2, and I-4, for example.)

Moreover, as discussed under F-1 and elsewhere, the plan relies upon erroneous assumptions about the management and protection of species' habitats on other private and public lands.

**11. Mitigation habitat must meet detailed habitat definitions and actually support populations of the species in question. Mitigation measures must be species-specific and described in detail.** The HCP must identify the specific stand characteristics, ecosystem processes, and other factors which correspond to the habitats being provided as mitigation. These characteristics will likely need to include factors such as canopy closure, tree species mix (including hardwoods), tree spacing, basal area, tree size and age distribution, the

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<sup>12</sup> The HCP claims the Headwaters Grove is being sold at 1/2 fair market value. (IV-B-1-27) This figure is probably not based on an accurate appraisal. However, if by some chance the purchase was made at below market values, then PalCo's "credit" should be discounted in proportion to the extent to which they donated the grove's value.

structure and density of tree limbs, understory vegetation, woody debris characteristics, snag characteristics, frequency of disturbances of different intensities, the makeup of soil communities, the presence of prey species and their habitats, relationships with populations of predators and exotic species, microclimate, the role of fire, distribution and spatial arrangement of the habitat across the landscape, etc.

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con.

*Additional Comments:*

As discussed above under C-3 and various items in Section F, the HCP generally fails to meet these criteria for most "covered" species. The plan's mitigation measures frequently fail to provide specific habitat components and population targets are not provided for most species. Species-specific measures are rarely provided. Even one of the better understood species, northern spotted owl, is simply assumed to benefit sufficiently from the measures provided for marbled murrelet and aquatic species (i.e., the riparian buffers) when as noted above under C-3, the owl's habitat distribution and habitat needs are often quite different.

**12. Mitigation measures must be clearly identified up-front in the HCP, and not left to future development through open-ended processes like watershed analysis.** While watershed analysis can make useful contributions to HCPs, including as part of an adaptive management process, adaptive management is intended to assure the long-term effectiveness of mitigation measures, and is not a substitute for up-front mitigation measures.

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*Additional Comments:*

The HCP fails to meet these criteria at several points. Mitigation measures for ferruginous hawk, for example, are wholly undefined and left up to consultation with the Services should hawks be found on the property. (IV-E-25) Actual management and logging levels that will be allowed in the MMCAs are also left up in the air, as discussed under C-3 above. While the watershed analyses proposed in the HCP do appear to have default bottom lines, conservation contributions above these defaults should not be counted at this time. The default standards for protection along Class II streams also appear to be left undefined, as noted above under C-3.

**13. Mitigation for habitat losses and degradation should occur prior to the planned impacts, and be monitored, evaluated, and if necessary, improved and augmented over time through adaptive management.** The provision of late successional forest stands in riparian buffers, for example, should not be counted until those habitat features actually develop -- something that will take 50 to 100 years or longer, depending on current conditions and how the buffers are managed. Species with long lifespans and generation times, and/or which are slow to disperse and colonize new habitats, will require a significant overlap in the time when the original and replacement (i.e., mitigation) habitat exists. Many forest species will require an overlap of 20 years or more.

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*Additional Comments:*

At least one major HCP developed by a commercial wood products company has already demonstrated the feasibility of providing successful mitigation prior to "take."<sup>13</sup> To its credit, PalCo's plan also provides some up-front (although frequently temporary) protections for the Headwaters Grove and MMCAs, although this is due largely to the public acquisition of the Headwaters Grove.

However, PalCo's plan fails to provide timely mitigation at several other key junctures, as noted under C-3 above. While the plan largely fails to replace old growth and late successional habitats that will be logged under the ITP, those replacement stands and trees that will be provided will not develop until many years after the original stands and residual trees have been logged, leaving sensitive and old growth dependent species without habitat for significant periods of time. Significant losses to these species' populations and viability can be expected to result.

**14. Generally, mitigation should occur on site.** Any offsite mitigation on other properties should be limited to similar ownership types, be focused on high-priority areas in landscape level biodiversity restoration plans, be located in nearby areas where possible, and contribute to the species' restoration and recovery beyond levels that would occur anyway on those sites. Management of federal, state, and other forest areas should not be counted towards impact minimization and mitigation for the property in question.

*Additional Comments:*

As discussed elsewhere, the plan inappropriately assumes that protection of the Headwaters Grove will provide sufficient mitigation for habitat losses across the rest of the plan area. Likewise, the plan erroneously assumes that management of federal lands in the region will adequately meet various species' survival and recovery needs and thus reduce PalCo's conservation responsibilities.

**15. Permanent mitigation, including reserves instituted through conservation easements, should be provided in return for "take" of habitats that will not be replaced for the foreseeable future.** Permanent late successional reserves for old growth dependent species should, for example, be established where landowners are converting residual old growth stands to commercially managed second growth stands. The permanency of the protections can be ensured by dedicating a conservation easement in perpetuity.

<sup>13</sup> International Paper's new HCP for red cockaded woodpecker in the southeast requires the company to successfully establish replacement habitat and viable replacement populations for woodpecker before "take" can occur elsewhere on the landowner's property.

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*Additional Comments:*

Generally, PalCo fails to provide permanent mitigation. It is questionable whether long-term protection of the Headwaters Grove should be fully counted, given its above-market purchase by the public. Protection of the MMCAs, riparian buffers, and other areas is not required after the plan's 50 year timeframe, even though a decision to approve the ITP and HCP will likely hinge on the assumption that protection of these areas is central to the long-term survival and recovery of various "covered" species. And as noted above, protection of the MMCAs may not even last for the 50 year plan period.

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CON.

Protections for specific "List A" and "List B" species may be particularly short-lived. While the plan states that minimal nest site protections will be provided for great blue heron, great egret, snowy egret, black crowned night heron, burrowing owl, and other species, no surveys have been conducted to identify nest sites, and the nest site protections are seasonal only, meaning that most of the nest site except for the actual nest tree and screening trees will be logged over time, potentially rendering the site unusable. (IV-E-11) Similar problems exist with the mitigation measures for osprey, sharp shinned hawk, Cooper's hawk, northern goshawk, western snowy plover, burrowing owl, bank swallow, which fail to protect nest or burrow sites outside of the nesting season, except in some cases for the nest tree itself. Contrary to the concept of conserving ecosystems rather than adopting species by species approaches, the HCP also proposes to replace nest trees with artificial nesting structures.

**16. Protection of habitat areas should not be contingent upon continuous use by the species in question.** Many species do not occupy the same site continuously. Consequently, a lack of protection for unused areas will lead to a cumulative loss of habitat. Protection should be provided year-round for species' nests and den sites.

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*Additional Comments:*

The HCP does a poor job of addressing this issue. On land available for harvest (i.e., most of the plan area), marbled murrelet and spotted owl nests will be protected only until the fledgling has left or until the site can be determined to be unoccupied (IV-32, IV-C-20). There is too much room for people to cut corners and assert that a nest site is no longer occupied without scientifically verifying it with multi-year surveys.

Some of the other mitigation measures are also vague and/or inadequate. For example, PalCo will be required to protect active owl nest sites in managed areas with 1,000 ft. radius buffers during breeding season. However, a much smaller 18 acre nest circle will be maintained during non-breeding season. (IV-20). These protections do not appear to extend beyond the plan's first 5 years, nor is the 18 acre protected area likely to be large enough to maintain the nest site's long term viability, meaning the site can be logged as soon as it is abandoned.

**17. If the HCP addresses fish, amphibians, water quality, and other aquatic and riparian species, then the plan should provide full protection for intermittent streams,**

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other non-fish bearing stream segments, wetland areas, and unstable slopes. Vegetation retention, canopy closure, and other factors on upland slopes need to be sufficient to ensure that winter/spring water flows are not excessive, that summer/fall flows are not reduced, and that other hydrological and ecological functions are maintained.

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CON.

*Additional Comments:*

The HCP largely fails to meet this criteria, as discussed above under C-3.

**18. If the HCP addresses species which utilize snags and down logs, then the plan must provide for the retention of a full range of sizes and decay stages.**

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*Additional Comments:*

As discussed above under C-3, the HCP fails to include specific retention standards for the majority of the forest landscape.

**19. Any remaining examples of primary old growth forests or other habitats which have not been significantly impacted by modern society should be protected as refugia and study areas.**

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*Additional Comments:*

While the HCP protects most of the more significant old growth stands on the property, these protections are often potentially only temporary, and significant amounts of roading, logging, and quarrying are allowed in ostensibly "protected" areas, i.e., the MMCAs. There does not appear to have been any assessment of other special sites that may have existed outside of the Headwaters Grove and MMCAs.

**20. HCPs for public lands in particular should actively contribute towards the establishment of an interconnected system of habitat reserves, corridors, and buffer areas across the broader landscape and region, sufficient to restore full ecosystem processes and all native flora and fauna.**

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*Additional Comments:*

The HCP makes some contributions towards the establishment of reserves, but fails to include any corridors. The plan's riparian buffers probably are inadequate as corridors, given their narrowness and the lack of clear buffers on Class II streams and the lack of any buffers whatsoever on Class III streams. Corridors and intact forest cover may also be needed along ridgetops and other key wildlife movement zones. Management in the "matrix" areas, i.e., the majority of the plan area, is also highly inadequate, and will function more to isolate the MMCAs and other reserve areas than to provide buffering and connectivity across the

landscape. Since protection of the reserve areas has been heavily subsidized by the public, it is quite practicable for PalCo to better meet these goals.

**21. Larger HCPs in particular should set-aside reserve areas for species which are particularly sensitive to disturbances and land management activities, for species which rely on old growth forests or other habitat types that will not be produced by the proposed land management, for species with high site fidelity, for species which are slow to disperse and colonize, for species for which the plan will not provide fully functional replacement habitats, etc. Reserve design must utilize the best available science, and reserves must comprise usable, functioning habitat.**

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*Additional Comments:*

See comments under C-3 and C-21. While the plan does begin to provide some reserves, their location and allowable logging levels may often be inadequate for more sensitive species and species with particular needs.

**22. Reserve area design must be sufficient to maintain habitats for population "sources," viable habitat for species which are particularly susceptible to disturbance, habitat for species which are slow to disperse or colonize new habitat areas, habitat connectivity across broader landscapes, etc. Analyses of reserves' benefits must be species-specific, in the case of species covered by the ITP, HCP, or IA. Reserves should be designed to minimize edge effects, support species distributions across landscapes, include more intact and less developed sites, and cover biodiversity "hotspots." Noss *et al* (1997) and Noss *et al* (1994) provides excellent overviews of the science of conservation reserve design.**

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*Additional Comments:*

See comments under C-22. Species specific analyses have not been provided in most cases, nor has the HCP's reserves' likely function as population sources versus "sinks" been examined.

**23. In the case of smaller landowners and some species, on and off-site mitigation banking might be an appropriate means of maximizing the size and connectivity of habitat reserve areas, and to help minimize fragmentation. Mitigation banking programs will need to incorporate additional safeguards and standards.**

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*Additional Comments:*

The HCP does not appear to utilize a mitigation bank, nor should it. However, inasmuch as public purchase and protection of the Headwaters Grove and subsidized partial protection of the MMCAs is counted as mitigation for industrial logging and "take" on the majority of the plan area, this will be an inappropriate *de facto* use of a mitigation bank. Protection of the

Headwaters Grove and MMCAs should only count towards mitigation of potential impacts in those stands.

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#### D. Unlisted Species:

1. If candidate, proposed-listed, rare, endemic, or other unlisted species are covered by the HCP, ITP, IA, and/or "No Surprises" type assurances, then the species' conservation and recovery needs, impact assessments, and impact minimization and mitigation measures must be addressed and developed as thoroughly as if the species were listed. Moreover, the mitigation measures provided for unlisted species must be sufficient to help reverse any population declines and to preclude the need for the species to be listed.

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##### *Additional Comments:*

The HCP fails to meet these criteria for various unlisted species, including the "List A" and "List B" species. See item C-3 section F for example.

2. All other HCP policies, goals, and standards for listed species are also applicable to unlisted species covered by the plan and its agreements.

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##### *Additional Comments:*

The HCP largely fails to meet this criteria.

#### E. Other Species and Ecosystem Goals:

1. The HCP should conserve and help restore habitats for species which are: endangered, threatened, candidate species, former candidates, proposed listed, in decline, area limited, dispersal limited, resource limited, process limited, keystone species, endemic, umbrella species, or otherwise of special concern.

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##### *Additional Comments:*

The HCP fails to conduct a conservation assessment and planning process for these species, except for those species found on "List A" and "List B." As discussed above under C-3 and other items, the assessment and mitigation measures for these species is also grossly



inadequate. The special ecological function of different species as keystones or umbrella species was not examined or planned for.

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**2. Special attention should be provided to species with large area requirements, specialized habitat needs, functional importance in their ecological community, or particular sensitivity to human disturbances.**

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*Additional Comments:*

These concerns were not given special attention in the HCP.

**3. The HCP should conserve and help restore entire ecosystems.**

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*Additional Comments:*

While protection of the Headwaters Grove and (to a lesser extent) the MMCAs is significant, the HCP envisions eliminating functioning forest conditions across most of the plan area.

**F. Planning and Analysis:**

**1. The HCP and NEPA analyses must use the best available science, as required by section 7 of the ESA, during all analyses, planning, adaptive management, and implementation.** Among other things, current population trend data, literature on species' habitat needs, information on how species are affected by different management practices, information on the economic benefits of alternate land management practices, population viability analyses, risk analyses, areas of uncertainty, and fires, windstorms, land management changes, and other "stochastic" factors should be identified and considered.

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*Additional Comments:*

As discussed under C-3 above, the HCP greatly exaggerates the amount of old growth forest and other habitat types that will be protected under the plan. This directly impinges upon the mitigation measures proposed for marbled murrelets, northern spotted owls, and other species. (See IV-B-1-35 for example.) Moreover, the discussion of northern spotted owl is extremely cursory, totally only 24 pages and including very little analysis of how owl populations will actually fare under realistic HCP implementation scenarios and how potential levels of "take" actually affect the owl's survival and recovery. It is also unclear whether the methods for determining marbled murrelet occupancy (and thus expected levels of murrelet "take") follow the best available science. The HCP indicates the survey protocol are based on regulatory definitions of occupancy. (IV-B-1-3)

The HCP also uses the total number of species by habitat type or seral stage as the sole indicator of biodiversity. (see III-L-2 for example.) This is inadequate. Other equally important measures should also be considered, including trends in key species populations, including indicator species, keystone species, and umbrella species, the condition of rare, endemic, and sensitive species, and diversity at the genetic and community levels, etc. The plan should also look at which species and habitats are lacking across landscapes, and address concerns with exotic plant, animal, and pest species.

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The HCP should not rely on assumptions about conservation measures provided on federal lands, at least not without recognizing the inadequacies of the Northwest Forest Plan and the Plan's implementation. (IV-C-3) The Plan was only expected to have an 80% chance of yielding well distributed populations of northern spotted owl across *federal* lands, and was not expected to produce viable owl populations across the region as a whole. (See American Lands (1998)) The U.S. Forest Service is also failing to comply with the Northwest Forest Plan, which was supposed to protect the old growth ecosystems and numerous threatened and endangered fish, wildlife, and plant species on federal lands in the range of the northern spotted owl. The agency is apparently ignoring the Plan's requirements and logging in Late Successional Reserves that were supposedly protected. Over 275 pending timber sales, totalling 1.2 billion board feet, reportedly fail to meet the Plan's requirements and are illegal. Under the Plan, agencies were also supposed to survey forests for rare plants and animals and then protect them from logging. Surveys have still not been completed for 33 are plants and animals after a five year deadline, which just passed.

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The HCP also relies heavily on the California Wildlife Habitat Relationship (WHR) system. While the system is far better than nothing, it has already been found to be inadequate for the quality of conservation assessment, planning, and mitigation needed with ITPs and HCPs.<sup>14</sup> In addition, PalCo's SYP document suggests that the company may be converting significant amount of redwood forest stands and habitats to Douglas fir. (III-C-Harvested Volume by Log Type) Setting aside the question of whether this is appropriate, the HCP fails to address how these changes will affect timber stand/wildlife habitat relationship assumptions used throughout the HCP.

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The HCP also relies heavily on research from the eastern US when discussing biodiversity, habitat relationships, landscape considerations, and other issues, ignoring the wealth of research which has been conducted on western forests and ecosystems. (III-L-2 et seq.) Ironically, given PalCo's reliance on assumptions about the Northwest Forest Plan, the HCP fails to incorporate information from the scientific studies which were developed for the Plan. These studies include some of the best available science and syntheses on the conservation needs of late successional species across the range of the northern spotted owl. (See USDA FS et al (1993) and American Lands (1998)) These studies are not even cited, much less utilized, including in HCP document II, Watershed and Fish & Wildlife Assessments.

<sup>14</sup> See the draft Ribar Timberlands HCP.

The HCP also fails to incorporate information from a variety of other readily available sources listed in Section M below.

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74 con.

The HCP also fails to discuss potential biases in those survey methods which were used. Many of the surveys relied significantly on visual observation, and may thus have been biased towards successful observations in recently logged and open areas. It is unclear whether the survey methods were sufficient to consistently identify reclusive predators like fisher and marten. (II-K-1)

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PalCo's information on the economic constraints underlying the HCP are both inaccurate and incomplete. As discussed above under C-5, the harvest levels cited for recent years, for example, are untypical of the historic harvest levels for the property, and represent a liquidation of PalCo's timber inventory. (IV-B-1-36) Thus substantial workforce reductions could be expected regardless of whether PalCo receives a "take" permit, protects marbled murrelets and other species, or somehow avoided dealing with threatened and endangered species altogether. The HCP also fails to discuss forest management alternatives which would maintain and enhance increased timber inventories in the plan's managed areas, with subsequent increases in medium and long term timber production and revenues.

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It is also unclear whether PalCo's projections are based upon a regulated forest model, versus stand by stand projections, which can be less accurate in terms of cash flows. (III-B-36; Hall (1998)) PalCo's projections also utilize a 6% discount rate and fail to account for how lower discount rates would provide a more accurate assessment of forest yields and income over time. (Hall (1998)) Finally, the HCP ignores PalCo's previous history of using more sustainable and "practicable" logging regimes. (See C-5 and Hall (1998))

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**2. Accurate baseline conditions and trends, including "no action" scenarios that maintain species protections, must be identified in the HCP and EIS document through field surveys for all species covered by the plan and through identifying full species specific protection and management measures for listed and as-yet-unlisted species that would likely be required over time in lieu of the plan.** Surveys should be conducted for all threatened or endangered, candidate, rare and endemic, and all other at-risk species, as well as for any other unlisted species covered by the HCP. While important, state species databases generally contain little information on species which may be on private lands. The Nature Conservancy and Native Plant Society have developed lists of at-risk species, many of which have not been officially listed as threatened, endangered, or candidate.

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#### ***Additional Comments:***

The HCP fails to meet these criteria in most cases. One of the only exceptions is where the EIS begins to look at riparian buffers that would be required in lieu of the ITP and HCP. Another exception is where the HCP requires surveys for bald eagle; however, these

surveys were not conducted prior to development of the HCP, and therefore the plan's baselines may not be accurate.

The HCP fails to identify accurate baseline conditions for watershed factors, riparian, and aquatic habitats. Without accurate baseline trends it is impossible to determine whether the plan provides a net benefit to aquatic and riparian species over time. While the HCP promises to conduct watershed analyses, they will occur after development of the HCP and (potential) approval of the ITP.

Even with marbled murrelet, surveys have not been conducted across much of the property. The plan also indicates that baseline habitat levels have not been fully established; worse, they won't be fully established until *after* a number of nest sites have been logged.

Relative little of the plan area appears to have been surveyed for southern torrent salamander, tailed frog, yellow legged frog, osprey, sharp shinned hawk, Cooper's hawk, northern goshawk, ferruginous hawk, peregrine falcon, pileated woodpecker, purple martin, bank swallow, yellow warbler, yellow breasted chat, and red tree vole. Likewise, the HCP indicates that population estimates for sharp shinned hawk for the HCP are lacking. (IV-E-20) No surveys were conducted for red legged frog, northwestern pond turtle, and double-crested cormorant, even though roading, logging, and other operations allowed by the "take" permit are likely to impact these species. Likewise, no surveys were conducted for burrowing owl despite the clear need for burrow protections. (IV-E-30) No surveys were conducted for great blue heron, great egret, and snowy egret, even though the plan clearly recognizes the need to provide nest site protections.

While heron and egret surveys are promised in the HCP, they will be conducted in conjunction only with proposed gravel extraction operations, meaning that timber operations may eliminate undocumented sites. (IV-E-11) Surveys for sharp shinned and Cooper's hawk are also promised, but will only occur on 10% of the managed area. In both cases, these surveys should have occurred prior to development of the HCP, to establish accurate baselines.

The HCP also explicitly acknowledges that nocturnal birds and bats were ignored by those survey methods which were used. (II-L-5)

**3. Where surveys cannot be conducted, or where the recovery of currently absent species is being considered, assumptions about which species are present on the property and/or which will need viable habitats on the property for their recovery should be based on an evaluation of the site's soils, potential (i.e., natural) vegetation, climate zones, elevations, topography, etc. It should not be assumed that past land management eliminated all sensitive species and their habitats.**

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*Additional Comments:*

These criteria do not appear to have been considered for most of the "List A" and "List B" species, nor for other species that might either exist on the property and/or need viable habitats on the property for their recovery.

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79 con.

**4. The definition of what land management practices constitute "take" of species' habitats must be biologically credible and sufficient to prevent population declines and to protect the species' chances of recovery across their ranges.**

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*Additional Comments:*

This criteria has most likely not been met for the "List A" and "List B" species. Problems with how the HCP addresses these species are discussed further under C-3.

**5. The conservation and recovery needs of all species covered by the plan must be explicitly identified, including in terms of specific habitat components, including specific tree structural characteristics, type and abundance of hardwoods, understory vegetation, soil conditions, hydrology and stream conditions, etc.**

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*Additional Comments:*

The HCP fails to identify specific habitat needs for most "covered" species. While the plan does note that Vaux's swift, purple martin, pileated woodpecker, Pacific fisher, and Humboldt marten need snags and down logs, the plan provides no research or discussion of what the species' specific needs and how they compare to the specific measures provided by the HCP in different locations. Rather, the HCP simply provides a short literature review on snags and down woody debris. (II-M) The fact that snags and down logs will not be provided across most of the forest landscape is not addressed. Volume II provides even less analysis for other species.

The HCP also cites studies indicating that northern spotted owl on PalCo's property and elsewhere in the northcoast region rely heavily on prey species associated with earlier successional forest stands. (IV-C-1) No consideration is given to whether the owl prefers these prey species and is on its way to recovery, or whether the owl is simply hunting whatever it can find, given that late successional forest and old growth species have been greatly diminished. (IV-C-1) Likewise, the HCP suggests that the owl needs "some sort of arboreal structure" for nesting. Even the habitat studies conducted by the Simpson Timber Company as background for its existing "take" permit and HCP indicate that while the owl is feeding off of early successional prey species, and is thus itself utilizing younger timber stands, many of the stands classified as "younger forests" had a residual old growth component where the owl was nesting. (IV-C-2)

**6. The plans must identify the specific forest management regimes likely to be used in different areas by the landowner over time.**

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*Additional Comments:*

While the SYP documents provided along with the HCP provide some indication of the forest management practices that will be utilized, the HCP itself fails to identify clear bottom-line forest practices and silvicultural regimes that will be followed. Consequently, it is unclear whether the regimes identified in the SYP document will be enforceable through the HCP and IA.

**7. The HCP and NEPA document must explicitly assess how all land management and development activities allowed under the ITP will affect each species and their habitat components, and how these effects compare to conditions needed for both the species' survival and long-term recovery.** The impact of specific types of operations should be evaluated, including the use of fertilizers, herbicides, pesticides, and other chemicals for forest management purposes. Any land management practice which is not specifically precluded by the HCP or IA, but which is among the types of activities permitted by the ITP, should be assumed to occur over time. Examples might include use of shorter timber rotations, logging of snags and larger "hazard" trees, "whole tree" or biomass logging, or subdivision and residential development. The HCP and NEPA document must identify those species which are more dependent upon private and state lands for their survival and recovery; species which are more dependent upon the property for their survival and recovery; and the percentage of the species' current ranges that are covered by the project area, and by other HCPs and other activities impacting their survival and recovery.

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*Additional Comments:*

The HCP fails to meet these criteria for most "covered" species. See item F-5 above, for example. The effects of various chemical use on terrestrial vegetation, habitats, and species is completely ignored. Moreover, as noted under F-6, the HCP and IA themselves do not identify bottom line forest practices that will be followed across the plan's managed areas; rather, these practices are identified in the SYP document, leaving their enforceability through the IA suspect. Consequently, it should be assumed that any logging practices allowed by the California FPA rules will be utilized across managed areas, meaning that these areas will provide little, if any, viable habitat for the "covered" species.

**8. The effectiveness of each mitigation measure must be explicitly evaluated, in relation to the species' conservation and recovery goals, based on the best available science.** The HCP and NEPA document must indicate when each impact minimization and mitigation measure will be provided; how long those measures will last; what the measures' location and geographic scope will be; and exactly how and to what extent the measures will reduce or offset "take" and other impacts. Mitigation measures should not be counted if they fail to benefit species until around the time the landowner is permitted to terminate the HCP.

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***Additional Comments:***

Meaningful analyses are lacking for most species. Even for species like northern spotted owl, the HCP still fails to really examine how the plan's specific mitigation measures will offset specific habitat losses and meet the owl's specific needs over time and space, particularly across the managed areas of the property.

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**9. Species-specific maps should document the location of baseline habitat areas, habitat areas that would exist over time *in lieu* of the ITP/HCP, and habitat areas that will exist over time under the ITP/HCP for each threatened, endangered, or otherwise sensitive species addressed by the HCP. Where feasible, the maps should indicate the number of individual animals, plants, etc. Habitat definitions used for the maps should be as specific as possible, distinguishing, for example, between primary and secondary habitat, nesting and dispersal habitat, etc.**

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***Additional Comments:***

The HCP fails to provide maps for most species except northern spotted owl, salmonids, and to a lesser extent, marbled murrelets. The murrelet maps appear to be based on only partial surveys and ignore areas outside the MMCAs

**10. The HCP or NEPA document must document how land management activities permitted by the ITP will affect critical habitat for any threatened or endangered species, regardless of whether the species are officially covered by the ITP/HCP.**

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***Additional Comments:***

The HCP does not indicate whether critical habitat for species other than marbled murrelet will be affected. For murrelets, the HCP does provide various data relating to critical habitat; however, a clear indication of the amount of critical habitat that will be clearcut or otherwise rendered non-viable for the murrelet has not been provided.

**11. If the HCP or NEPA document claim that State Forest Practices Rules or other non-ESA policies adequately protect species, then the documents must discuss how, when, and where specific species are protected by these policies.**

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***Additional Comments:***

The HCP claims that existing FPA rules adequately protect several "List A" and "List B" species without substantiating these claims. See C-3 above.

**12. The HCP and NEPA analyses must account for how exceptions to the plan's impact minimization and mitigation measures will affect the HCP's performance and species' chances or survival and recovery.**

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*Additional Comments:*

The HCP fails to take a hard look at the impacts to different covered species and their mitigation measures that will result from operations permitted in MMCAs, riparian buffers, and other areas. As noted above under C-3 and other items above, habitat conditions for some species may be degraded even by thinning operations in MMCAs. Likewise, the IA indicates that protections for the MMCAs may be terminated under certain conditions. The HCP fails to account for how this will undermine mitigation measures for other species that are based wholly or in part on conservation of the MMCAs. As discussed above, the HCP also fails to account for problems with the proposed "floor" on spotted owl populations.

**13. The plan must identify measurable and enforceable biological goals for each species that correspond to full mitigation, benefits above baseline conditions, and contributions to recovery.** The contribution to recovery should be commensurate with the size of the property. Goals should be defined in terms of both quantitative and qualitative population and habitat targets, and other performance standards. Habitat goals must address specific habitat components that provide viable, functional habitat.

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*Additional Comments:*

The HCP fails to meet these criteria for all covered species.

**14. The HCP and NEPA analyses must account for likely "stochastic" factors, such as forest fires, windstorms, and other events which are natural parts of forest ecosystems, as well as likely changes in local and regional climate and vegetation zones that will result from both natural and human-induced climate change.**

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*Additional Comments:*

While the HCP does take the positive step of beginning to discuss these factors in Section H of the HCP, this section simply deals with the "changing circumstances" provisions of the "no surprises" guarantees requested by PalCo. Consideration of and responses to stochastic factors and changing conditions is not integrated into the HCP's basic design, which would be even more effective from a conservation standpoint, and would also reduce the likelihood that PalCo will need to provide additional mitigation over time, thereby increasing the up-front certainty for PalCo.

**15. The HCP and NEPA analyses must address the full life-cycle needs and ecological linkages and interdependencies of the species in question, including food sources,**

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impacts from invasive exotic species, relationship with populations outside the plan area, etc.

*Additional Comments:*

While the HCP begins to address these questions with regard to marbled murrelet and northern spotted owl, the plan fails to meet these criteria for most species.

16. The HCP and NEPA analyses should address fundamental ecological functions and processes such as soils, seasonal fluctuations in hydrology, nutrients, and other factors.

*Additional Comments:*

The HCP fails to address and protect these concerns.

17. If the HCP uses "guilds" or other approaches to addressing species which supposedly utilize similar habitat types, then the plan: i) should only group together those species which use very similar habitats, ii) must identify the specific habitat components used by each group (versus simply saying that "x" species use vaguely defined poletimber stands, for example), and iii) should discuss how these habitat components will be affected by forest management.

*Additional Comments:*

The HCP fails to meet these standards, as discussed below under F-18.

18. Likewise, if habitat models, indicator species, or guilds are used, then they must use the best available science and detailed habitat descriptions, be clearly related to specific silvicultural or other land management practices, and limit indicators, guilds, and other groupings to species with closely related habitat needs.

*Additional Comments:*

PalCo acknowledges that the limited information gathered through their species surveys and guild modelling "did not seem to provide clear, positive relationships between species and seral types." (II-K-1) Since it has been well established that many forest species *are* relatively dependent on different forest seral stages, PalCo's modelling is clearly inadequate. (USDA FS *et al* (1993)) One possibility is that PalCo simply surveyed for species and then assumed that if a species were found in a given seral stage/habitat type, that the species was associated with that type, regardless of whether the species is highly dependent upon the habitat or was just "passing through."

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19. Nevertheless, all threatened, endangered, candidate, proposed listed, rare, endemic, or otherwise at-risk species must also be addressed individually. Use of guilds, models, etc., should not substitute for more detailed and species-specific information.

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*Additional Comments:*

While the HCP fails miserably to provide adequate species-specific analyses and mitigation, it does discuss "List A" and "List B" species individually.

20. Credible and thorough cumulative effects analyses, including analyses of indirect effects, must address the role of "take," the ITP, and HCP in the larger landscape and species habitat trends. Other past, present, and reasonably foreseeable HCPs and other public and private land management actions throughout the species' ranges must be considered.

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*Additional Comments:*

The HCP fails to address cumulative impacts in most instances. Even the HCP's discussion of effects on marbled murrelet survival and recovery, for example, fails to discuss the impacts of other "take" permits and HCPs issued across the murrelet's range, as well as actions on federal lands and other ownerships that have continued to reduce murrelet habitat and populations in recent years. Reasonably anticipated future impacts across the murrelet's range have not been examined. (IV-B-1-24) As noted below, a substantial amount of addition murrelet habitat may also be "taken" by other ITPs and HCPs which in development across the region. Furthermore, the HCP erroneously assumes that marbled murrelet habitat on federal lands is permanently protected, and that protection levels expected under the Northwest Forest Plan are actually being implemented. (IV-B-1-13, -21) (See F-1 above) EPIC & Sierra Club (1998) indicates that 1,107,612 acres of northern spotted owl habitat and 299,590 acres of murrelet habitat have already been eliminated, degraded, or otherwise "taken" by operations on federal and non-federal lands in the region in recent years alone.

The HCP's analyses for other species are even more cursory. Nevertheless, the impacts allowed by this large ITP/HCP will also be added to those already occurring under other related projects, including other forest ITPs/HCPs in the state and region, and activities on federal forestlands. ITPs/HCPs allowing substantial net losses of habitat for northern spotted owl, marbled murrelet, and other threatened, endangered, rare, endemic, or otherwise sensitive species have been approved for roughly 383,000 acres of non-federal forestlands in California and 2,517,000 acres regionwide. An additional 3,015,000 and 10,807,000 acres of non-federal forestland will be covered by ITPs/HCPs which are in development in California and the region, respectively. (American Lands (1998b)) Examples of specific documented and undocumented habitat losses resulting from some of these plans are discussed in American Lands (1998).

21. Conservation measures on other properties and ownerships should not be used to discount the need for protection and mitigation in the plan area.

*Additional Comments:*

See F-1 and F-20 above. The HCP relies upon erroneous assumptions about conservation on Federal lands.

22. The HCP and NEPA documents must explicitly identify any data and/or analyses which were needed but unavailable.

*Additional Comments:*

The HCP generally fails to discuss whether any data and analyses are lacking.

23. Arguably, an ITP and HCP should not be developed for species for which there is no recovery plan or critical habitat designation, since: i) it may be impossible to properly address the species' needs without this information and, ii) HCPs are being substituted for recovery plans and critical habitat designations.

*Additional Comments:*

Recovery plans are not in place for most of the species covered by the HCP.

24. If the landowner fails to provide adequate mitigation, the HCP should: i) document why alternate forest management regimes which better provide for species would not also provide a reasonable economic return at different time periods, and ii) document the landowner's financial situation. If documentation requires the inclusion of proprietary information, an independent accounting firm can be used to review that information.

*Additional Comments:*

The HCP fails to provide any such information.

G. Monitoring:

1. The plan must require that both compliance and effectiveness monitoring occur frequently over time, including monitoring of species' populations and reproduction, habitat quantity, habitat quality and specific habitat components, habitat trends, and other goals and indicators. Compliance monitoring assesses whether the landowner is

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implementing the mitigation measures and following the terms of the ITP, HCP, and IA. Effectiveness monitoring helps assess whether the mitigation measures are, when implemented, actually working to offset the landowner's impacts and support target species.

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***Additional Comments:***

The murrelet monitoring provisions are good as far as they go. However, explicit quantitative goals for murrelet population trends and reproductive success should be included in the conservation objectives section, not just in the research questions section. (IV-B-1-41) Provisions for continuing effectiveness monitoring after the plan's first 5 year period also need to be established. Other problems with the murrelet monitoring plan are discussed below under G-3.

Otherwise, the plan largely fails to establish basic monitoring protocol for assessing specific "covered" species' populations and habitat trends over time. The watershed analyses proposed for some species as a form of monitoring are not adequate.

**2. Monitoring must cover all species, plan components, plan goals, and the full duration of the ITP and HCP.**

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***Additional Comments:***

While the HCP indicates that surveys will be conducted for great blue heron and great egret, no schedule or monitoring protocol are included, nor is the relationship with adaptive management processes discussed. Likewise, while the plan states that watershed analysis will be used to monitor and provide adaptive management for southern torrent salamander, tailed frog, red legged frog, such analyses are a one-time effort and do not provide sufficient monitoring over most of the plan's lifespan. Provisions for other species are generally even less well developed. The EIS also notes several gaps in the HCP's monitoring provisions. (2-78 et seq)

**3. Monitoring must be based on scientifically credible protocol, and address current and potential causes of species' population declines, habitat changes, community and ecosystem changes.**

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***Additional Comments:***

The murrelet monitoring plan for assessing population trends centers around monitoring populations at-sea. (IV-B-1-42) While there appear to be benefits to including at-sea studies in a population assessment strategy, as the HCP notes, the at-sea studies will yield region-wide results. Effectiveness monitoring also needs to examine populations trends that can be clearly associated with the HCP and implementation of the HCP.

The HCP also states that if at-sea population studies do not show any increases in the rate of decline of murrelet populations over the short term, then it will be assumed that the HCP is functioning properly in terms of murrelet conservation. (IV-B-1-43) Such an assumption may not be warranted, as it may take some time for problems with the HCP and its implementation to become apparent through at-sea population studies, both because of time lags between cause and effect, and because the at-sea studies appear to cover a broader population. Additional, more responsive effectiveness indicators are needed.

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The monitoring plan for northern spotted owl is grossly inadequate and will undermine the utility of the "floor" on owl "take." (See B-3 above) The HCP states here that the average monitoring results for the first 5 years of plan implementation will be used to establish the population baseline. (IV-C-21) Baselines should be established *before* "take" of owl habitat and owls occurs. As noted above, the majority of owl habitat outside of the Headwaters Grove, MMCAs, and no-harvest riparian buffers can be expected to be logged within the plan's first few years. Equally important, the HCP fails to identify a monitoring schedule for the remaining periods of the HCP.

The effectiveness monitoring process for Vaux's swift, pileated woodpecker, and purple martin is backwards. The HCP states that the generalized effectiveness monitoring protocol will be used to determine whether the HCP is benefitting specific species like the swift and woodpecker. (IV-E-32, -33) Instead, monitoring of specific indicators and target conditions such as swift and woodpecker populations, reproduction, prey species, and habitat should be used to determine whether the HCP and its measures are, in general, working effectively.

Monitoring protocol for other covered species are essentially nonexistent.

**4. The Services should conduct regular field inspections as part of both compliance and effectiveness monitoring.**

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*Additional Comments:*

The HCP fails to provide a timeline or set of indicators for such inspections.

**5. Monitoring must provide a foundation for proactive adaptive management -- versus simply counting species until they disappear.**

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*Additional Comments:*

The marbled murrelet monitoring plan completely fails to establish an explicit relationship between monitoring results and adaptive management. Equally disturbing, the HCP states that the annual feedback of the Services and PalCo's scientific panel on monitoring results and efforts shall only be advisory. (IV-B-1-43) The discussion under G-3 is also of concern here.

The HCP's owl monitoring plan does include an important nexus with adaptive management, inasmuch as drastic declines in owl populations below floor levels will trigger a "no take" strategy. (IV-C-21) However, as discussed above, other problems with monitoring and the design of the "floor" will render this system relative ineffective.

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Monitoring and adaptive management provisions for other species are even less well developed.

**6. Monitoring results must be available to the public.**

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*Additional Comments:*

The HCP and IA fail to explicitly provide for public access .

**H. Adaptive Management and Landowner Assurances:**

**1. The HCP and IA must ensure that credible adaptive management will occur throughout the plan's implementation, to provide a mechanism for plan review, contingency planning, and corrective action.** Reviews should occur at least every five years, and must consider potential corrections and additions to the plans' mitigation measures in light of monitoring data, new scientific information from outside sources, and changing conditions, both foreseeable and unforeseeable.

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*Additional Comments:*

The HCP fails to include an explicit, systematic adaptive management plan. Rather, extremely vague and insufficient adaptive management procedures are mentioned in the context of some of the covered species.

**2. Adaptive management must cover all species and plan components -- not just areas where there are data gaps -- particularly for plans covering longer time periods.**

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*Additional Comments:*

As noted above under H-1, the plan fails to provide adaptive management protocol for many covered species, and fails to provide any protocol whatsoever for other covered species.

**3. Adaptive management protocol must include identification of management goals, stressors to species and ecosystems, models and hypotheses, performance indicators, monitoring and sampling protocol, performance "triggers" and adverse biological trends that will require plan changes, collection of data which was missing initially,**

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regular review of monitoring data and new scientific information, and evaluation and potential modification of management prescriptions and mitigation measures.

*Additional Comments:*

In almost all instances, the HCP fails to even begin to meet these criteria. Virtually no performance indicators or "triggers" are identified, and the plan lacks a coherent, thorough adaptive management program. Vague references to watershed analyses do not constitute an adaptive management program.

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**4. Adaptive management should not be used *in lieu* of well-defined, up-front mitigation measures.** If, in addition to periodic plan evaluation and correction, adaptive management is used for experiments, then the experiments must be limited to a small portion of the plan area.

*Additional Comments:*

The HCP provides neither adequate up-front mitigation nor adequate adaptive management.

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**5. Landowner assurances should take the form of explicit, up-front agreements about the plan's biological goals, monitoring, adaptive management, and enforcement, and fair allocation of responsibility between the landowner and public for funding future plan changes.** In other words, the plan should provide up-front clarity and assurances about the process that will be used to identify and make improvements to the plan -- instead of simply precluding meaningful plan improvements through "No Surprises" type assurances.

*Additional Comments:*

The HCP and IA generally rely on "no surprises" type assurances and fail to meet these criteria.

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**6. The landowner must retain responsibility for supplementing and improving the plan's conservation and mitigation measures as may be recommended by adaptive management reviews, to ensure that population targets and other goals are met over time.**

*Additional Comments:*

The HCP and IA generally fail to meet these criteria, both because the plan lacks scientifically adequate monitoring and adaptive management protocol, and because of the manner in which the IA's "no surprises" guarantees are written. Meeting these criteria would not be "impracticable" or unreasonable, as demonstrated by existing forest HCPs which

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include provisions requiring the landowners to provide additional mitigation over time should it prove necessary.<sup>15</sup>

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**7. The landowner must retain responsibility for funding and providing additional mitigation in response to all foreseeable changing circumstances or other circumstances within the landowners' realm of responsibility.** *This is a critical requirement -- these circumstances must be explicitly identified in the HCP and IA.* They include changes in the landowners' land management practices; fires, windstorms, pest outbreaks, and other "stochastic" events which are a natural ecosystem processes; additional species listings over time; and increased susceptibility of the forest to invasive exotic pests, pathogens, and plant and animal species due to the landowner's forest management practices. Possible management changes include use of shorter timber rotations, use of "whole tree" and biomass harvesting, use of different tree species, etc.

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***Additional Comments:***

While the HCP does represent an improvement over existing HCPs inasmuch as it begins to identify changed circumstances and measures PalCo will take to respond to such circumstances, this section of the HCP is nevertheless grossly inadequate. (IV-H) Contrary to statements made in the IA, Section IV-H of the HCP does *not* contain a complete and exclusive list of all foreseeable "changed circumstances" or all changing circumstances which are reasonably within PalCo's realm of responsibility, nor does Section IV-H contain a complete and exhaustive list of all mitigation measures and actions that will be needed over time in response to various changing circumstances. (VI-D-34)

Rather, Section H has largely been designed to absolve PalCo of its responsibility for responding meaningfully to changed circumstances. The section does not represent a genuine effort to develop a thorough inventory of possible changing circumstances and appropriate responses. The section also suffers from a number of additional problems described in greater detail below.

Much of the background discussion of forest dynamics in this section covers the entire Pacific Coast region and is not applicable to this HCP. The discussion of forest dynamics for the north coast region and HCP plan area is extremely cursory and poorly researched.

<sup>15</sup> The Washington DNR HCP's adaptive management plan identifies several potential management changes that the DNR will undertake should they become necessary, even if they involve additional costs to the DNR. These potential changes include providing buffers for intermittent streams, increasing spotted owl protections, and reducing sedimentation from roads. The Plum Creek Timber Co. also agreed to modify and improve its forest management to meet target outcomes for northern spotted owl. Likewise, the company agreed to provide additional mitigation over time if required by watershed analysis and water quality monitoring. Likewise, changes in Plum Creek's operational or management prescriptions resulting from the watershed analyses and aquatic monitoring components of the HCP's adaptive management provisions will not be considered "unforeseen" or extraordinary" circumstances, and Plum Creek will provide additional or enhanced stream buffers or other protection measures if required by these analyses.



Changes in forest dynamics as a result of PalCo's recent and proposed management of the plan area are completely ignored, as are changes in forest management that might be carried out by PalCo over time. Such information should either be readily available or easily extrapolated. The nearby location of Humboldt State University and the Redwood Sciences Laboratory should make this task even easier.

PalCo evades its responsibility in many cases by arguing that major or "catastrophic" events occur infrequently under natural forest conditions and should be considered "unforeseen circumstances." Obviously, the very fact that we can determine the natural fire regime of redwood forests and the frequency of stand replacing fires, for example, indicates that such events *can* be foreseen, even if we can't predict *when* they will happen.<sup>16</sup> If such events are expected to be rare, as PalCo argues, then it should be a safe bet for PalCo to take responsibility for such events. (IV-H-5)

However, the HCP fails to consider the probability that recent and proposed industrial timber management operations under the HCP have and will continue to significantly alter natural fire regimes and other forest dynamics. Intensive clearcutting frequently produces substantial amounts of slash and other flammable material and produces large openings, resulting in drying of the site and further increases in flammability. Douglas fir, various hardwoods such as tanoak, and understory brush will also become far more dominant across the managed areas of the property after the existing redwood stands are clearcut, further altering the natural fire regime and increasing both fire frequency and the likelihood that major stand components will be destroyed in fires of various intensities and sizes. Spraying hardwoods and other brush with herbicides will also produce substantial amounts of highly flammable materials below the natural crown level for redwood forests.

Consequently, fires over 2,500 acres should *not* be considered an "unforeseen circumstance," but must be considered a "changing circumstance." Likewise, multiple small fires which add up to 2,500 acres or more should not be considered "unforeseen." Equally important, PalCo must retain responsibility for maintaining the integrity of the plan's mitigation measures *vis a vis* fires across the plan area, including within MMCA's, Class III streams, and other special sites, not just within the buffers for Class I and Class II streams. (IV-H-6)

While PalCo does purport to retain responsibility for responding to smaller, lower intensity fires, the HCP still fails to account for impacts to species other than marbled murrelet, northern spotted owl, and aquatic species. Fires of various intensities can have significant impacts on the other covered species, particularly if natural stand conditions and fire regimes are significantly altered.

<sup>16</sup> Likewise, the HCP suggests that many species have survived disturbances throughout history and thus can be expected to survive disturbances in the plan area in the future. (IV-H-3) This statement overlooks the drastic loss and fragmentation of habitats which has occurred in this region in recent time. Ecosystems and individual species' populations are far less resilient than they once were, and the level of intensive industrial logging practices and "take" permitted by the "take" permit and HCP across most of the plan area will simply exacerbate this condition.

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Similarly, the HCP fails to account for the likelihood that PalCo's past and future land management has and will increase the risk and severity of windthrow, landslides, floods; and other disturbances. The HCP fails to account for the likelihood of more severe storms resulting in greater than usual amounts of windthrow. Current windthrow patterns within riparian buffer strips in managed areas may also reflect current stocking levels and tree sizes in those buffer strips. The HCP needs to account for changes in stocking and tree sizes that will occur in these buffers under the HCP, and provide for appropriate responses.

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Consequently, windthrow exceeding 500 feet should also be considered a "changing circumstance," not an "unforeseen circumstance." (IV-H-8) PalCo must also be responsible for responding to windthrow along Class III streams, not just Class I and II, particularly if such windthrow would affect erosion rates and hydrology along these streams. Moreover, PalCo must be responsible for responding to windthrow and the HCP's potential failure to retain sufficient snags, green trees, and other components across the remainder of the managed landscape. Likewise, PalCo should be responsible for windthrow within MMCAs and other areas of special concern. Providing a windthrow buffer alongside otherwise required riparian buffer strips would, of course, reduce the likelihood that PalCo will need to respond to changing circumstances. Windthrow buffers are being proposed through the (now defunct) Timber Fish Wildlife process for riparian area standards in the State of Washington.

PalCo's past and proposed roading, logging, and other industrial operations have and are likely to continue substantially increasing the likelihood and severity of landslides. Moreover, landslides which themselves encompass relatively small percentages of the total length of a stream within a given watershed can easily significantly *affect* instream habitat conditions across 50% or more of the stream reach. Consequently, *all* landslides should be considered "changing circumstances," rather than "unforeseen circumstances." (IV-H-9) Equally important, landslides which affect Class III streams, MMCAs, special species sites, and other resources of concern must also be considered "changing circumstances." In addition, PalCo needs to account for other landslide related changes besides sediment loading, such as direct impacts to sensitive species sites and other areas of concern.

Similar problems exist with the provisions regarding flooding. Given changes in hydrology, soils, and other conditions in watersheds encompassing the plan area, floods with effects greater than historically associated with 100 year floods may now be more common. The HCP also fails to account for other changes beyond sediment control which may be needed in response to flooding. Major floods can alter stream courses, for example, requiring commensurate shifts in the location of stream buffers. Floods may also affect sensitive species' nest sites and other areas of concern.

Section H also fails to account for changing circumstances and needed responses that may result over time from PalCo's land management regimes and practices and from changes in those regimes and practices. While some of these changes are certainly foreseeable, all such

changes are within PalCo's realm of responsibility and should be considered "changing circumstances," regardless of whether they happen to be foreseen now.

In general, PalCo must retain responsibility for improving and/or supplementing the proposed mitigation measures in response to *all* changes in land management, including (but not limited to) increases in grazing, recreation, and other non-timber uses, as well as changes in forest management practices including (but not limited to) changes in silvicultural practices, changes in timber harvest levels, changes in species, changes in the use of herbicides, fertilizers, and other chemicals, etc.

Moreover, even PalCo's proposed land management practices may lead to changing conditions for which PalCo should retain greater responsibility. Such changes may include, but are not limited to, the establishment of invasive exotic plants and animals in highly disturbed managed areas, shifts in forest type and seral stage from older redwood to younger Douglas fir and hardwoods, failure and/or abandonment of efforts to regenerate well stocked forests in clearcut areas, and decisions not to conduct precommercial and commercial thinning and other operations in regenerating clearcuts. Such changes can affect forest structure, habitats, and fish, wildlife, and plant associations, can increase susceptibility of the forest to exotic and domestic plant pests and pathogens, and can have other impacts.

Other changing conditions which can reasonably be foreseen, both as a result of PalCo's proposed land management practices, and as a result of broader trends, include but are not limited to: designation of critical habitat and development of recovery plans for currently or newly listed species; continued declines in populations of marbled murrelets, northern spotted owl, salmonids, and other species, including other species "covered" by the HCP; upgrading "threatened" species listings to "endangered," etc. While the HCP does note that additional species listings are considered a "changing circumstance," the HCP neither identifies specific steps that PalCo will take in response to such changing circumstances, nor does the plan clearly require that PalCo will simply provide additional mitigation for these species if found necessary by the Services. (IV-H-14) Such requirements would not be unreasonable and have been incorporated into other existing HCPs.<sup>17</sup> Similar linkages must also be drawn between other changing circumstances and PalCo actions.

The HCP's proposed process for responding to various changed circumstances also needs to include an explicit bottom-line timeframe for making the changes. Currently, the HCP simply states that work will be done as soon as personnel become available. (See IV-H-6 for example)

**8. If critical habitat designations or recovery plans do not exist for the species, then the plan must be amended once they are developed. The landowner should be responsible**

<sup>17</sup> The IA for the Plum Creek Timber Co's HCP for the Central Washington Cascades states that the listing of new species as threatened or endangered shall not be considered "unforeseen" circumstances.

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for providing additional mitigation if the plans' initial mitigation measures were inadequate.

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*Additional Comments:*

See H-8 above. The HCP and IA do not appear to require making such amendments as per these criteria. Indeed, the IA attempts to expressly exempt PalCo from supplementing the HCP's mitigation measures, if necessary, in response to designation of critical habitat for various "covered" species, even though designation of critical habitat is wholly foreseeable and should be considered a "changed circumstance." (VI-D-32)

9. Landowner assurances should *not* take the form of "No Surprises" type guarantees or other guarantees that largely preclude additional mitigation by setting extremely high burdens of proof for the Services, requiring additional mitigation to first occur on public lands, by requiring any additional mitigation to be fully subsidized by the public, and/or requiring any additional mitigation to be voluntary. "No Surprises" supposedly encourages landowners to proactively conserve species which are not listed as threatened or endangered by indemnifying the landowners from providing additional mitigation should the species be listed at a later date. However, the up-front analyses, protections, and mitigation measures for unlisted species are rarely sufficient. Even in cases where the up-front provisions are more adequate, changes and additions to these measures may well become necessary over time, including as a result of changes in the landowners' management practices.

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*Additional Comments:*

The HCP and IA largely rely on "no surprises" guarantees and suffers from most of the problems commonly associated with these guarantees and other HCPs that have purported to address unlisted species. (See VI-D-33, for example.) As discussed elsewhere, the HCP fails to provide adequate analyses and mitigation measures for "List A" and "List B" species, and fails to address other unlisted species altogether. The IA fails to even incorporate the list of covered species referenced in the agreement, further complicating review of the appropriateness of any "no surprises" assurances. As has been proposed with other HCPs, "no surprises" guarantees certainly should not be provided for species which have not been adequately evaluated or which will not benefit from the plan's mitigation measures.<sup>18</sup>

The IA also takes the novel step of claiming that extension of seasonal restrictions on logging to protect nesting sites or other sensitive resources will comprise "additional mitigation" that is precluded by the IA's "no surprises" guarantees. (VI-D-33) This may be stretching the

<sup>18</sup> The Services proposed to withhold "No Surprises" guarantees for species which would most obviously not benefit from the Weyerhaeuser Willamette HCP. Put most simply, the HCP states that Weyerhaeuser must provide additional documentation on how the HCP benefits species which depend on older, upland forest stands before the species may be included in the ITP. The Services determined that the HCP does not benefit these species.

terms of the "no surprises" rule beyond its original meaning. Certainly such provisions have never been included in IAs for existing forest HCPs.

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**10. The burden of proof should be on the landowner, rather than the public, to show that the plan adequately addressed the needs of newly-listed species, when requests are made to add the species to the ITP. Species should not be automatically added to ITPs.**

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*Additional Comments:*

As discussed below under I-10, the IA contains several provisions which, in effect, would automatically add species to the ITP contrary to these standards.

**11. The Services' failure to respond within narrow periods of time should not be grounds for the landowner to unilaterally proceed with requested changes to the ITP/HCP.**

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*Additional Comments:*

The final terms of the HCP and IA should be checked against this criteria.

**12. Additional lands should not added to the HCP and ITP over time without commensurate analysis and site-specific mitigation.**

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*Additional Comments:*

The IA's provisions for adding additional lands to the HCP and ITP are problematic. While the IA contains some valuable provisions, they are undermined elsewhere. The IA states generally that new lands acquired by PalCo can only be added to the HCP and ITP through an amendment process. (VI-D-25) This is, of course, the appropriate mechanism for adding lands to the plan and ITP. However, the IA also states that up to 25,000 acres of neighboring land may be added to the HCP and ITP with only cursory evaluation to limit "take" of marbled murrelets and to provide temporary protections for northern spotted owl. (VI-D-25) No protections exist for other listed or otherwise sensitive species which might utilize the neighboring parcels.

Similarly, the provisions governing land exchanges and the "disposition of covered lands without restriction" simply require the parcels to contain similar habitat values. (VI-D-28) No surveys or other analyses are required to determine whether special status species and sites are present on the lands that will be disposed of and thus exempted from the HCP's mitigation measures.

**13. The Services must retain authority to incorporate new information into the HCP, ITP and IA, and to modify the plan and its implementation to provide additional**

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conservation measures which may prove necessary for the conservation and recovery of the species covered by the plan.

*Additional Comments:*

The Services do not appear to retain such authority through the HCP and IA. Incorporation of additional measures appears to be voluntary on PalCo's part.

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**I. Enforcement and Long-Term Implementation:**

**1. The HCP must be covered by explicit, thorough, legally-binding, and publicly-available Implementation Agreement (IA) that satisfies each of the following points.**

*Additional Comments:*

While a draft IA has been provided, it fails to meet many crucial criteria, including those listed below, as well as several criteria from the preceding section.

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**2. The full scope of the plan's mitigation measures, monitoring, adaptive management, and plan revision and improvement requirements must be enforceable, and meaningful penalties, injunctive relief, and restoration requirements must be available to the USFWS and NMFS for cases of noncompliance.**

*Additional Comments:*

The IA's remedies and enforcement section fails to provide for meaningful and effective remedies, penalties, and restoration requirements. At the same time, the IA holds PalCo non-liable for any breaches of the IA or failure to follow the HCP's terms. (VI-D-56)

While the SYP documents provided along with the HCP provide some indication of the forest management practices that will be utilized, the HCP itself fails to identify clear bottom-line forest practices and silvicultural regimes that will be followed. Consequently, it is unclear whether the regimes identified in the SYP document will be enforceable through the HCP and IA.

It is essential that a company with a track record of ESA and FPA violations like PalCo remain liable for damages and that other remedies, penalties, and restoration requirements be expressly included in the IA. The ITP provides PalCo with a permit to significantly harm threatened and endangered species, under the presumption that the HCP will adequately mitigate these impacts. Failure on PalCo's part to fully implement the HCP's mitigation measures, violations of the HCP, or other actions on PalCo's part that exceed levels of "take"

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allowed by the ITP and HCP will significantly and potentially permanently harm threatened and endangered species and other public trust resources. The IA must be improved to include effective deterrents against violations and noncompliance. Among other things, PalCo should be held responsible for repairing any unauthorized damage to species' habitats and their chances of survival and recovery. Requiring restoration and payment for damages is also not without precedent in north coast region HCPs.<sup>19</sup>

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**3. Enforcement language should not be replaced by dispute resolution processes, though dispute resolution can sometimes supplement enforcement provisions.**

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*Additional Comments:*

The final version of the IA should be checked against this criteria.

**4. The provision of mitigation measures by the landowners must be enforceable throughout the entire time period for which they are needed, including *after* the ITP expires.** Logging residual old growth *refugia* will, for example, result in relatively permanent impacts; mitigation should be provided for commensurate time periods. Mitigation must also continue on portions of the property which might be sold, traded, or otherwise disposed of.

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*Additional Comments:*

While the IA should be credited for generally requiring PalCo to continue implementing the HCP's provisions for MMCAs and other mitigation measures throughout the plan's 50 year lifespan, even if the plan is terminated early, the IA fails to require mitigation beyond this 50 year lifespan. (VI-D-53) The requirements for continued mitigation should the ITP be revoked by the Services or relinquished by PalCo are valuable but vague and poorly defined. (VI-D-49, -52)

Moreover, as discussed above under C-3, the HCP and IA include provisions which may allow PalCo to terminate the protections for the MMCAs *before* the HCP expires. These latter provisions are patently unacceptable, given that they are limited only by concerns with marbled murrelets, despite the fact that the MMCAs are counted as principle mitigation measures for a host of other listed and unlisted species "covered" by the HCP.

**5. The Services need to explicitly retain the right to require mitigation after "take" has already occurred.** Many IAs only provide the Services with the power to cancel the ITP in accordance with the ESA's permit revocation requirement; this provides little leverage to require ongoing mitigation after "take" has already occurred. One approach is to have the landowner post bond to help ensure that mitigation continues to occur after "take" has

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<sup>19</sup> The IA for the Regli Estate HCP grants the Services the right to require restoration of any habitat values that are impacted in violation of the HCP. The Services may also seek damages for some types of violations.

occurred. Alternately, the HCP and IA can be placed as an encumbrance on the land title. Dedication of a permanent conservation easement to the Services or a third-party trust is the most enforceable approach to encumbering the title. This will also help ensure that mitigation continues if the property is sold or transferred to another landowner.

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***Additional Comments:***

The HCP actually does a fairly good job here. In addition to the provisions noted above under I-4, the IA requires PalCo to dedicate a binding covenant requiring continued mitigation for the remainder of the plan's original term should the plan be revoked or relinquished prior to its expiration at year 50. (VI-D-54)

However, these provisions still fail to require continued mitigation beyond the HCP's original term.

**6. The USFWS and NMFS must periodically review the plan's implementation to ensure the landowner is complying with the HCP, its adaptive management requirements, and other provisions.** Reviews should be published in the Federal Register and include a plan summary, a status review of the species involved, a compliance report, any new information on the species' status, and any modifications needed to plan.

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***Additional Comments:***

The HCP and IA do not include express requirements or schedules for such reviews and publication by the Services.

**7. The USFWS and NMFS must retain the right to terminate the ITP if the agencies determine that the HCP no longer actively contributes to the species' recovery.**

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***Additional Comments:***

It is not readily clear that the IA maintains this right.

**8. The IA must explicitly maintain citizens' rights under the ESA to bring suit for violations of the plan, ITP, and IA, which should be understood as violations of the ESA.**

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***Additional Comments:***

Experience has shown that citizen suits are frequently essential to effective and timely implementation of the ESA and actions to be carried out under its various provisions. The



HCP and IA completely fail to maintain these fundamental and crucial rights, contrary to the model established by the nation's first HCP.<sup>20</sup>

**9. The IA must not limit the landowner's obligation to protect unlisted species prior to their listing if those species are covered by "No Surprises" assurances and/or are otherwise included in the HCP, ITP, and/or IA.**

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*Additional Comments:*

The IA should be credited for beginning to address this concern by stating, in the context of requiring continued mitigation should the plan be revoked or relinquished prior to its expiration, that unlisted "covered" species will be treated as if they were listed. (VI-D-53)

**10. If the ITP and IA provide the landowner with "No Surprises" guarantees for unlisted species, then the IA should explicitly state that the Services will re-evaluate the HCP when considering whether to add newly listed species to the ITP. The Service will need to ensure that the HCP meets all of the existing HCP policies and standards. The more detailed goals and standards identified in this checklist should, of course, also be considered.**

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*Additional Comments:*

The IA contains several provisions which expressly contradict these basic requirements and are wholly unacceptable. The IA erroneously states that PalCo will, based on the draft HCP, minimize and mitigate the impacts of "take" of species which are not yet listed but which are nevertheless "covered" by the HCP to the maximum extent practicable, and that such "take" will not appreciably reduce those species' likelihood of survival and recovery. (Our analysis also finds that these statements are also erroneous with regard to listed species.) Most covered species are not yet listed and have not been well studied. Certainly they have not been well studied in the HCP, nor have they been provided with adequate mitigation measures. Nor have these unlisted species been addressed "as if listed," as required by Congress, the "no surprises" rule, and other existing policies.

Consequently, it is premature to hold that the ESA's issuance criteria for ITP's have been met for these unlisted species. (VI-D-10) Instead, the IA should expressly require the Services to re-examine, after a previously unlisted species is listed and if PalCo requests that the species be added to the ITP, whether the HCP still adequately addresses the species' conservation and mitigation needs under the ESA and its rules. This approach has been used in a number of other existing HCPs and is quite reasonable.<sup>21</sup>

<sup>20</sup> The San Bruno plan, the model for the ESA section 10 ITP/HCP process, maintained citizens' enforcement rights.

<sup>21</sup> See the Plum Creek HCP for its ownership in the Washington Cascades, for example.

Equally important, unlisted species should *not* be expressly included in the ITP. Contrary to the express language of the ESA, which states that "take" permits may be issued for species *listed* pursuant to the Act, the draft IA states that the Services will issue an ITP to PalCo for all "covered" species, most of which are currently unlisted. (VI-D-11) A more appropriate approach would be to amend the ITP to include newly listed species *after* they are listed and the Services have re-examined whether the HCP meets the ESA's basic standards and issuance criteria for HCPs with regard to those species. This is also the approach that has been used with previous HCPs.

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Likewise, the ITP should not be *automatically* extended to previously unlisted yet "covered" species upon their listing, as envisioned in the IA. (VI-D-31) As discussed above, the ESA's basic structure and precedents set by previous HCPs require the Services to re-examine the HCP in light of the ESA's HCP standards and issuance criteria with regard to newly listed species when deciding whether to add those species to an ITP.

Similarly, the Services should not presume, as envisioned in the IA, that the ESA s. 7 biological opinions drafted in conjunction with the HCP's initial approval will still be valid many years into the future when conditions have changed enough to warrant listing new species as threatened or endangered. (VI-D-32)

## J. Funding:

**1. Public funding to support additional mitigation measures in response to truly unforeseeable circumstances may be appropriate. However, up-front funding sources must be assured before approval of an HCP that uses this approach.** Unforeseeable circumstances must not be defined to include natural disturbances, changes in markets or the landowner's land management practices, additional species' listings, declines in species' conditions due to the landowner's land management or inadequate initial mitigation measures, or the development of additional information on species whose needs were not well researched.

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### *Additional Comments:*

The HCP does not appear to use public funding for these purposes.

**2. Up-front funding must be assured for all plan components and implementation, including monitoring and adaptive management.** Landowner bonds, public funds, and other moneys must be dedicated up-front to cover the costs of adaptive management changes, as well as continued mitigation should the landowners terminate their HCPs early or other contingencies arise during or after the plan period.

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*Additional Comments:*

While the IA takes the positive step of requiring PalCo to dedicate a \$1.5 million bond to ensure that road storm-proofing operations will occur over time, the IA fails to require similar guarantees for implementation of the HCP's other mitigation measures. (VI-D-22)

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**3. In the interest of fairness, it may be appropriate for landowners to contribute to HCP trust funds. Contributing landowners should include those who have eliminated all known habitats for threatened and endangered species, and are thus not developing ITPs/HCPs.**

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*Additional Comments:*

PalCo does not appear to be contributing to such a fund.

**K. Additional Goals and Requirements for the EIS:**

**1. The EIS should assess likely costs to the public and future generations of the proposed HCP versus alternatives.** Costs may include lost fish and wildlife, lost fisheries employment, lost rare plants and future medicines, regional ecosystem failures, the cost of paying landowners to restore habitat areas, the cost of paying landowners for adaptive management and improvements to their HCPs that have been precluded by "No Surprises" agreements, the cost of increasing protections on Federal lands to compensate for failed HCPs on private lands, etc.

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*Additional Comments:*

The EIS generally fails to meet these criteria. Moreover, the EIS fails to consider the economic costs and benefits of an alternative mitigation scenario for the HCP that includes both protection of the Headwaters Grove, MMCAs, and riparian buffers, and management of the remainder of the plan area through longer rotations, selection forestry, and other alternative practices that can yield greater medium and long-term timber production and revenues, as discussed in Hall (1998).

**2. The EIS must assess impacts to all environmental values in the plan area, including both direct and cumulative effects.** These values include, but are not limited to, unlisted, sensitive, rare or endemic, or otherwise at-risk fish, wildlife, and plant species; water quality; water supplies and the timing of flows; air quality; open space; soil productivity; and the sequestration and storage of atmospheric carbon dioxide.

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***Additional Comments:***

Generally, the EIS fails to provide objective analyses above and beyond those provided in the HCP, and thus generally suffers from the same shortcomings as the HCP, as discussed above.

The EIS frequently assumes, for example, that the California FPA Rules provide adequate protection for fish and wildlife habitats, without examining in detail whether the goals of the FPA are in fact met by implementation of the Rules. (See 3.10-108 for example) As noted in the recent listing decisions for various salmonids, the FPA Rules often fail to provide adequate protection for fish and wildlife, and their implementation frequently does not meet the stated goals of the FPA. Likewise, the EIS frequently fails to account for how the HCP's mitigation measures will be undermined by various exceptions and open-ended management provisions included in the HCP and IA, including provisions allowing the MMCAs to be logged after the HCP's first few decades. (See 3.10-115, for example)

Likewise, the EIS fails to provide a cumulative effects analysis for wildlife species. Assessments of cumulative impacts to fish, wildlife, and plant should include impacts to threatened, endangered, and other sensitive species permitted through other ITPs and HCPs in the region. Information on other forest ITPs and HCPs in the west coast region is provided in American Lands (1998) and (1998b).

**3. Off-reservation American Indian treaty rights must be considered, including through consultation with the relevant tribes.**

***Additional Comments:***

Due to time limitations, we did not review the adequacy of the EIS' treatment of tribal interests.

**4. The EIS must also account for any new information which has come to light during development of the HCP.**

Generally, the EIS fails to provide objective analyses above and beyond those provided in the HCP, and thus generally suffers from the same shortcomings as the HCP, as discussed above. The EIS has not accounted for recent information on violations of the ESA, California FPA, and other relevant policies by PalCo, and thus does not adequately address the primary question of whether PalCo is eligible for an ITP.

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## L. Summary of Key HCP Policies:

The HCP, IA, and EIS should be evaluated for compliance with the following provisions of the Endangered Species Act (ESA), the National Environmental Policy Act (NEPA), the Services' regulations, the Services' HCP Handbook, court decisions, and other policies. These provisions also underlie most of the goals and standards listed above.

Please note that the following summary is *not* exhaustive; other provisions may also be applicable to the ITP, HCP, IA, and EIS. Likewise, policies listed under one section and subheading may also apply to other areas.

### **1. Scope and Applicability of HCPs.**

The summary of the Federal Register notice for the USFWS' HCP regulations states that ITPs/HCPs are intended for "...limited circumstances...." [50 Fed Reg 189, September 9, 1985.]

The discussion for the draft "No Surprises" rule stated that species should *not* be included in the HCP/ITP if data gaps or insufficient information makes it impossible to craft conservation and mitigation measures for those species.

NMFS' regulations do not appear to authorize ITPs for *threatened* anadromous fish and other species under NMFS' jurisdiction. The Federal Register notice for the NMFS regulations state that "...making these regulations apply to all threatened marine species is not appropriate...." [55 Fed Reg 97, May 18, 1990, as provided in USFWS et al. (1996).]

### **2. Relationship to Other ESA Policies and Programs:**

Listed plants must be addressed and protected by ITPs/HCPs under ESA s. 7(a)(2). The Services may not approve an action which jeopardizes the survival and recovery of listed plants.

### **3. Conservation, Recovery, and Mitigation Standards:**

The Services' HCP Handbook states that if the landowner cites economic considerations as the reason for failing to utilize an alternate land management approach, then the landowner must provide supporting economic information, unless it is proprietary. [USFWS et al (1996), p. 3 - 36]

ESA s. 10(a)(2)(B)(iv) precludes the Services from approving an HCP which appreciably reduces a listed species' chances of survival and recovery in the wild.

ESA s. 7(a)(2) also prohibits federal agencies from approving actions which would destroy or "adversely modify" species' critical habitat areas.

The HCP Handbook states that mitigation should not only be based on sound biological rationale, but also be "commensurate with the impacts." [USFWS et al (1996), p. 3-19]

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ESA ss. 10(a)(2)(A)(iv) and 10(a)(2)(B)(v) also authorize the Services to require mitigation measures *beyond* those “practicable” mitigation measures required by ESA s. 10(a)(2)(B)(ii). Likewise, the HCP Handbook also states that all HCPs should address other measures required by the Services. [USFWS *et al* (1996), pp. 1-7 & 3-10.]

*Sierra Club et al v. Bruce Babbitt et al* recently held that replacement habitat must be provided for habitat destroyed by development projects. [Civil Action No. 97-0691-CB-C, Order August 4, 1998, S. Dist., AL, S. Div.]

The Services must analyze and document whether the HCP has indeed minimized and mitigated “take” to the maximum extent practicable. [*Sierra Club et al v. Bruce Babbitt et al*, Civil Action No. 97-0691-CB-C, Order August 4, 1998, S. Dist., AL, S. Div.]

ESA s. 10(a)(2)(B)(ii) requires impacts be minimized and mitigated to the “maximum extent practicable.” In the context of the Clean Air Act, “practicable” means economically or technologically possible. [*Union Electric Co. v. EPA* (427 US 246 (1976), as cited in Arum (1998)] Likewise, the cost of an alternative should only determine its practicability in relation to other alternatives with the same level of environmental performance. [*Friends of the Earth v. Hall* (693 F Supp 904, 947 (W.D. Wash 1998), as cited in Arum (1998)]

The NMFS rules for permits also state that the Administrator will consider whether the best available technology was used for impact minimization and mitigation. [50 CFR 222.22(c)(iv).]

According to the HCP Handbook, the Services may not be able to approve an ITP under ESA s. 7(a)(2) unless the HCP addresses *all listed species* in the plan area. [USFWS *et al* (1996), p. 3-7] Presumably this includes federally listed plants, which must be considered during the ESA s. 7 consultation process. This requirement highlights the importance of species surveys, and suggests the utility of contacting local biologists and persons who know the property to get a sense of what may actually be on site.

The legislative record for ESA s. 10(a) indicates that Congress intended for HCPs to *enhance* species’ chances of survival. [HR Conference Report 835 (1982).] The HCP Handbook also cites this legislative intent and states that the Services should “encourage” landowners to provide a net benefit to species. [USFWS *et al* (1996), pp. 7-2 to 7-5 and 3-20]

As indicated in ESA s. 3(3), the ESA’s ultimate goal is to recover threatened and endangered species to the point where they can be removed from the endangered species list. This has been affirmed by the US Supreme Court in *TVA v. Hill* and *Babbitt v. Sweet Home Chapter of Communities*. [See *Gaffney et al* (1997).] Several district court cases have also held that recovery must be assessed above and beyond mere survival. [See *House v. USFS* and *Idaho DFG v. NMFS*.] The HCP Handbook also states that the Services should “discourage” HCPs that preclude recovery options or which are inconsistent with recovery plans. Consistency with recovery plans is also included in the Handbook as a “helpful hint.” [USFWS *et al* (1996), p. 3-20 and 1-15.]

ITPs/HCPs may not rely upon speculative sources of mitigation, such as promises of additional funds for habitat acquisition from unnamed sources. [*Sierra Club et al v. Bruce Babbitt et al*, Civil Action No. 97-0691-CB-C, Order August 4, 1998, S. Dist., AL, S. Div.]

Providing funds for research is not sufficient as mitigation. [USFWS et al (1996), p. 3-23]

The Service's HCP Handbook states that if new habitat is being created as mitigation, then the habitat must be created through techniques that are proven and reliable or, if relatively new, then those techniques must be augmented by contingency measures and adaptive management. [USFWS et al (1996), p. 3-22.]

The Handbook also states that mitigation habitat should be close to the impact area, similar to the impacted habitat types, and support the same species. [USFWS et al (1996), p. 3-22.] The same mitigation methods should be used for the same species by different HCPs, unless there are "biological or other differences" which are "clearly explained." [USFWS et al (1996), p. 3-24]

Mitigation and protection measures must be clearly defined for agencies to make decisions that hinge on such measures. Likewise, the mere promise of future actions is not sufficient to meet the ESA's protection standards. [See *LaFlamme v. FERC* (852 F.2d 389, 400 (9th Cir 1988)), and *ONRC v. Daley* (1998 WL 296838) (D.Or 1998), as cited in Arum (1998), as well as *Sierra Club et al v. Bruce Babbitt et al*, Civil Action No. 97-0691-CB-C, Order August 4, 1998, S. Dist., AL, S. Div.]

The Service's HCP Handbook states that mitigation habitat should be provided *prior* to the "take" of a species habitat. [USFWS et al (1996), p. 3-21]

The HCP Handbook states that mitigation habitat should be permanently protected. [USFWS et al (1996), p. 3-22]

#### 4. Unlisted Species:

The final "No Surprises" rule and the legislative history for s. 10(a) both state that any unlisted species covered in an HCP must be addressed as if it were listed. "...Congress realized that "...circumstances and information may change over time and that the original [habitat conservation] plan might need to be revised. .... In the event that an unlisted species ... is subsequently listed ... no further mitigation requirements should be imposed if the conservation plan addressed the conservation of the species and its habitat as if the species were listed pursuant to the Act." (Conf. Report at 30 and 50 FR 39681-39691, Sept. 30. 1985)...."

The HCP Handbook also states that, in order to "adequately cover" an unlisted species, HCPs must satisfy the ESA s. 10(a)(2)(B) HCP issuance criteria for those species, as if the species had been listed. [USFWS et al (1996), pp. 3-30, 4-1] The standards for addressing listed species in HCPs are found in ESA ss. 10(a)(2)(A) and 10(a)(2)(2)(B), and include minimizing and mitigating "take" to the maximum extent practicable, ensuring adequate funding for the HCP's implementation, and not appreciably reducing the species' chances of survival and recovery in the wild. [ESA ss. 10(a)(2)(B)(ii), (iii), and (iv).]

The HCP Handbook also states that if information on unlisted species' conservation needs is lacking, then the landowner should either: i) use adaptive management to incorporate new information as it becomes available, ii) conduct additional research on the species' needs, or iii) agree to reduced "No Surprises" guarantees for those species. [USFWS, et al (1996), p. 3-30] The draft "No

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Surprises" rule also suggested that unlisted species need to be addressed by removing threats to their survival and recovery, such that the species would not need to be listed if the measures were undertaken across the species' range.

## 5. Planning and Analysis:

ESA section 7(a)(2) and the Act's administrative rules require agencies to use the best available science. [16 USC 1536(a)(2).]

The NMFS regulations state that HCPs must describe the status, distribution, seasonal distribution, habitat needs, feeding habitat, and other biological requirements of affected species or stocks. [50 CFR 222.22(b)(3).]

The Services' HCP Handbook also begins to recognize the importance of surveys, noting that even "low effect" HCPs should be based upon surveys. [USFWS, et al (1996), p. 3-12] Presumably this applies not only to listed species, but also to unlisted species, if they are to be addressed "as if they were listed."

The NMFS regulations state that HCPs must describe the proposed activity, including the anticipated dates, duration, and specific locations. [50 CFR 222.22(b)(4).]

The NMFS regulations state that HCPs must describe the ITP/HCP's anticipated impacts, including the amount, extent, and type of "take," as well as the anticipated impact on habitats and the likelihood of habitat restoration. [50 CFR 222.22(b)(5)(i) & (ii).]

ESA s. 7(a)(2) prohibits federal agencies from approving actions which would destroy or "adversely modify" critical habitats.

*Sierra Club et al v. Bruce Babbitt et al* recently found that HCPs need to determine how many individuals of affected species will be "taken," how many individuals will remain, what the distribution of the species is throughout its remaining habitat, and how this relates to the species' minimum viable population. [Civil Action No. 97-0691-CB-C, Order August 4, 1998, S. Dist., AL, S. Div.] *Sierra Club* also found that current data on species' conditions and recovery needs must be used; goals included in recovery plans are not sufficient if conditions have changed since those plans were written.

Effects on proposed listed species, federally listed plants, and critical habitat are to be considered during the ESA s. 7 consultation process. [USFWS et al (1996), p. 6-15, and 16 USC 1536(a)(2).]

The Services' HCP Handbook states that: i) "habitat based" HCPs should use indicator species to establish forest management parameters, and ii) all endemic, sensitive, listed, proposed listed, candidate, and species of special concern should be addressed "adequately." [USFWS et al (1996), pp. 3-12, -37]

NEPA requires a cumulative effects analysis. ESA s 7 also requires consideration of cumulative and indirect effects. [50 CFR 402]

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The HCP Handbook states that if economic considerations are used to justify not using a given forest management or mitigation alternative, then the landowner must provide supporting data if it is reasonable and nonproprietary. The Handbook also requires the Services to consider the cost of additional mitigation, the benefits of additional mitigation, the amount of mitigation provided by other landowners, and the landowner's own abilities. [USFWS et al (1996), pp. 3-36 and 7-3.]

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## 6. Monitoring:

ESA s.10(a)(2)(B) states that the terms and conditions necessary to assure the plan will be implemented include reporting requirements. Reporting cannot occur without monitoring.

Monitoring is also required under the Service's regulations at 50 CFR 17.22(b)(1)(iii)(B) and 50 CFR 222(b)(5)(iii). According to the HCP Handbook, all HCPs must monitor their impacts over time. [USFWS et al (1996), pp. 1-7 & 3-10]

The HCP Handbook also states that an HCP's monitoring provisions should be as specific as possible and be commensurate with the project's scope and the severity of its effects. [USFWS et al (1996), p. 3-26] The Handbook also states that monitoring must be sufficient to detect trends in species' populations. [USFWS et al. (1996), p. 3-27.]

The HCP Handbook states that monitoring protocol must specify the frequency, timing, and duration of data collection; must specify how the data will be analyzed; and must specify who will do the analysis. [USFWS et al (1996), p. 3-27.]

The USFWS regulations state that by being granted an ITP, the landowner has agreed to grant access to Service staff to property, records, and other areas. [50 CFR 13.21(e)(2) and 13.47.]

## 7. Adaptive Management and Landowner Assurances:

The introduction to the final "No Surprises" rule notes that Congress recognized "that circumstances and information may change over time and that the original [HCP] may need to be revised. To address this situation, the Committee expects that any plan approved for a long term permit will contain a procedure by which the parties will deal with unforeseen circumstances." [H. Rep. No. 835, 97th Cong. 2d Sen. (1982), as cited in the proposed No Surprises rule.] (Note that Congress did *not* necessarily suggest that the public should be solely responsible for funding additional mitigation required over time in response to unforeseen circumstances, as tends to be required by the "No Surprises" rule.)

The HCP Handbook states that contingency measures should exist when landowners create/restore habitat as mitigation, in case the new habitat isn't viable. [USFWS et al (1996), p. 3-22]

As recognized by the Services' HCP Handbook, adaptive management is especially important for species whose conservation needs are not yet well known, as is usually the case with unlisted species. [USFWS et al (1994) and USFWS et al (1996).]

ESA s. 10(a)(2)(B) also requires HCPs to include assurances the plans will be implemented, continue to minimize and mitigate the impacts of take, and continue to avoid jeopardizing the

species' chances of survival and recovery. ESA s. 10(a)(2)(A)(iv) also requires the Services to require other measures as necessary to ensure the plan's success.

The HCP Handbook states that "thresholds" (i.e., triggers) for adaptive management review should be linked to key elements of the HCP and its monitoring protocol. Further, the thresholds must be based on measurable criteria. [USFWS et al. (1996). p. 3-25.]

The introduction to the final "No Surprises" rule notes that many changes in circumstances during the course of an HCP can be reasonably anticipated -- including the listing of new species, fires, and other events -- and the plans should describe how the plan will be revised if these changes occur. The "No Surprises" rule itself then states that if such changed circumstances are identified in the HCP, then the landowner will be responsible for making and funding the corresponding plan improvements when and if they become necessary.

Likewise, the HCP Handbook states that "unforeseen circumstances" *don't* include changed conditions that could reasonably be anticipated by the landowner or the Services, including the listing of new species or modifications in the landowner's activities. [USFWS et al (1996), p. 3-28]

The final "no surprises" rule also states that "...adequately covered means, with respect to ... unlisted species, that a proposed conservation plan has satisfied the permit issuance criteria under section 10(a)(2)(B) of the ESA that would otherwise apply if the unlisted species covered by the plan were actually listed..." and "...if additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and were provided for in the plan's operating conservation program, the permittee will implement the measures specified in the plan." [Federal Register, 63:35, February 23, 1998.]

## 8. Enforcement and Long-Term Implementation:

ESA ss. 10(a)(2)(A)(iv) and 10(a)(2)(B) state that the Services shall require "...other measures...necessary or appropriate for purposes of the plan" and "...other assurances...that the plan will be implemented." The HCP Handbook's template implementation agreement (IA) also states that the purpose of an IA is to ensure that each item of the HCP is implemented. [USFWS et al (1996), Appendix 4, pp. 3 & 6]

Further, the HCP Handbook also states that enforceable mitigation should be included in HCPs. [USFWS et al (1996), p. 1-16]

The Handbook states that mitigation habitat should be permanently protected. [USFWS et al (1996), p. 3-22.]

The Service's Handbook states that the landowner should provide up-front legal or financial assurances, such as a letter of credit, if mitigation measures will be implemented after "take" occurs. [USFWS et al (1996), p. 3-22.]

The HCP Handbook anticipates that conservation easements can be used to ensure the HCP "runs with the land." [USFWS et al (1996), p. 6-30]

ESA s. 10(a)(2)(C) states that the Services "...shall revoke a permit...if [they] find that the permittee is not complying with the terms and conditions of the permit."

The Handbook's template IA includes some limited provisions for injunctive and temporary relief. The template IA also states that the purpose of an IA includes providing rights to remedies and relief. [USFWS et al (1996), Appendix 4, pp. 3 & 6]

## 9. Funding:

The existence of adequate funding is required by the ESA section 10 standards for ITPs/HCPs.

The HCP Handbook also states that large scale HCPs may also need perpetual funding to cover long term monitoring and mitigation. [USFWS et al (1996), p. 3-24.]

## 10. NEPA Environmental Analysis:

Under NEPA, an EIS must "rigorously explore and objectively examine all reasonable alternatives." [40 CFR 1502.14(a).]

Under NEPA, where economic preferences are used to select the preferred alternative, the decision must not be based on misleading, biased, or incomplete economic information. [*Seattle Audubon v. Lyons* (871 F. Supp. 1291, 1324 (W.D. Wash. 1994), aff'd 80 F.3d 1401 (9th Cir. 1996), as cited in Arum (1998)]

The existence of a "viable but unexamined alternative renders an environmental impact statement inadequate." [*Alaska Wilderness Recreation & Tourism v. Morrison* (67 F.3d 723, 729 (9th Cir. 1995), as cited in Arum (1998)] Likewise, an agency may not "consider only those alternatives with [the same] end result." [*Resources Ltd. v. Robertson* (35 F.3d 1300, 1307 (9th Cir. 1994), as cited in Arum (1998)]

The HCP Handbook notes that the Services must consider impacts on Federally-listed plants, during ESA s. 7 consultation, regardless of whether those plants are "covered" by the HCP. Plants protected by state laws are among those which must be addressed, pursuant to ESA s. 9. [USFWS et al (1996), pp. 1-6, 3-8, & 3-17]

Under NEPA, environmental impacts which must be considered include impacts to ecological, aesthetic, historical, cultural, economic, social, and health values, including direct, indirect, and cumulative impacts. [Mueller et al (1997).] The HCP Handbook also states that impacts to air quality, water quality, and land use patterns should be addressed. [USFWS et al (1996), p. 1-6]

Mitigation measures should be provided for *each* significant impact under NEPA. [40 CFR 1502.16(h).]

Cumulative effects analyses are also required as part of the ESA s. 7 consultation process for HCPs, as per 50 CFR 402.

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Off-reservation American Indian treaty rights must be considered, including through consultation with the relevant tribes, according to the HCP Handbook. [USFWS et al (1996), p. 3-9]

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Contractors for NEPA documents need to be selected by the Services. Moreover, the contractors should not have a financial or other interest in the outcome of the project. [See section 1506.5(c) of the NEPA regulations.] The HCP Handbook also states that the Services are responsible for drafting the NEPA document. [USFWS et al (1996), p. 2-4.]

The Services must take a "hard look" at the environmental consequences of approving an action, i.e., an ITP/HCP. [*Kleppe v. Sierra*, 427 U.S. 390, 410 n.21 (1976).]

The HCP Handbook states that an developing an implementation agreement (IA) for an HCP may be essential to justifying a Finding of No Significant Impact (FONSI). [USFWS et al (1996), p. 3-37]

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